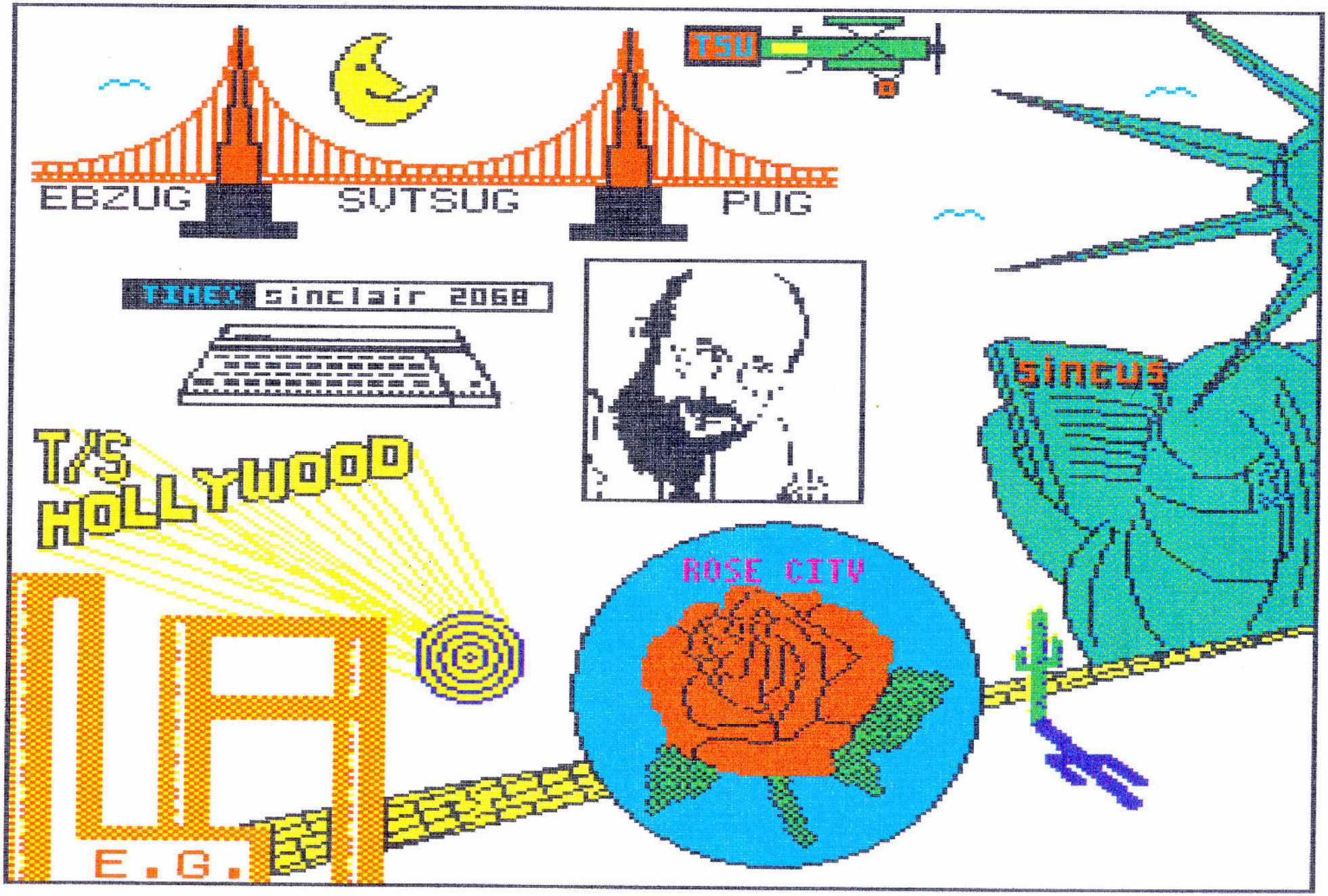
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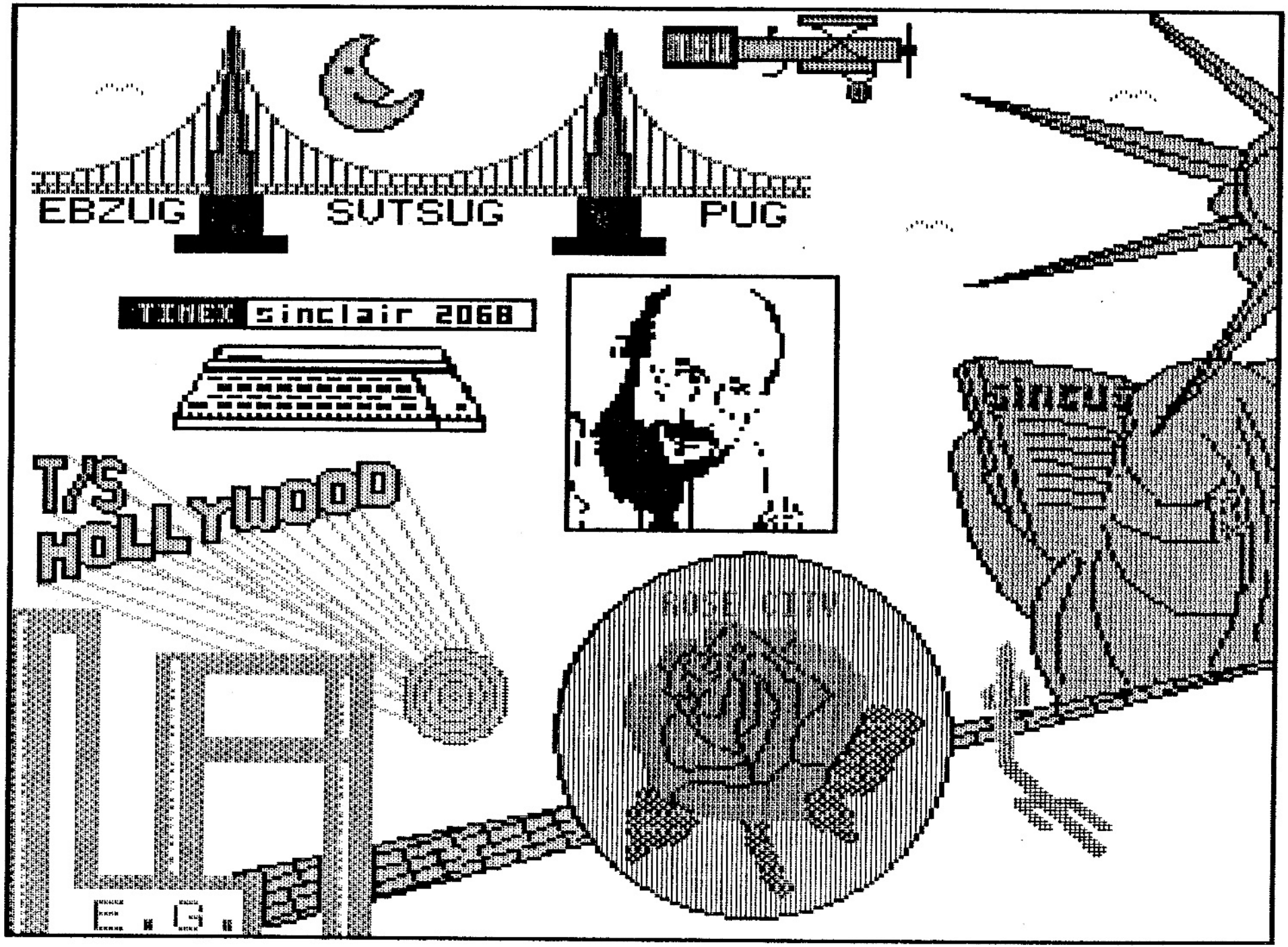
SVTSUG
PUG
TSU
TIMEX sinclair 2068
T/S HOLLYWOOD
E.G.
ROSE CITY
sincus


EBZUG
SVTSUG
PUG
TIMEX sinclair 2068
T'S
HOLLYWOOD

ABOUT THE COVER

The image on the cover is an RLE, but NO ORDINARY RLE! This one has traveled THOUSANDS of miles, let me explain... I began the RLE in Phoenix as a very simple image, with LOTS of white space. Then, Ed Grey called Phoenix via PC Pursuit and downloaded the RLE from me. He then added his part and sent it on to Gary Lessenberry in Chicago. Gary added his part and sent it on to Chris Raynak in Cleveland. Chris added his plane and sent it on to BUBBS BBS in New York. John Colonna Downloaded it from BUBBS, and he and Paul Hill of the SINCUS group added their parts. John then sent the RLE to Michael Carver in Portland OR who added a rose. Then, Carl Forst picked it up from Michael via PC Pursuit again, and brought it down to L.A. where he added a Motion Picture Industry image to it. Lastly the image of our dear old Uncle was placed in the top center. Finally Carl sent it on to Norm Lehfeldt in San Francisco who loaded it into his QL, added color and then printed it out on his color printer. All in all, the image travelled some 8,000 miles (assuming no satellite links were used). No cassettes or disks were mailed, all transmissions were electronic ones involving modems and xmodem protocol. The whole process took less than 3 weeks, and most of that time was simply human procrastination (on my part also). But it stands as a testimony to the electronic times we live in. (NOTE: only 50 copies of the Color cover were made, the rest were B/W)
Both the B/W and color versions of the cover RLE were printed using the QL screen dump routine written by Don Thompson (who also wrote the M.Code version of the RLE doecoder for the QL: "RLE.BIN".)The screen dump software available from Curry Computer

Pete Fischer
P.O.Box 2002
Tempe,AZ 85281
MCI Mail 310-4437

Steve Ishii
18414 Deloise Ave.
Cerritos,CA 90701

THE GUIDE TO T/S TELECOMMUNICATIONS

by T/S USERS

Dedicated to the Sysops & Cosysops who work so hard to make this a better world for all T/S'ers.

Edited by
Pete Fischer &
Steve Ishii

"...help spread the word to the uninformed: data telecommunications is here to revolutionize the way people interact with other people on a daily basis...We..look anxiously toward the day when worldwide data transmissions become affordable [for all]..."

Ken Coller, Telecommunications User Group

TABLE OF CONTENTS

1 Introduction

Friends, we tried to cover quite a bit of ground here, so please be patient if it's not totally complete. We saw a need for this guide and attempted to fill it. Both the editors spent hours and hours calling all over the U.S. in the last year. We endeavored to bring some of this experience together into our humble guide. We are users, not Sysops. We felt this objectivity was important. You judge for yourself if it was worth it.

There were a number of significant developments which convinced us that T/S Tele-communications as an activity seemed ready for expansion. First, was the development of Xmodem protocol last year by Kurt Casby (and later by Zebra Systems and Grey & Clifford Computer). Second, there was the availability of VERY reasonably priced 2050 modems. These can STILL be found from some vendors. Third, came the announcement of Tinyboard BBS software by Randy and Lucy Gordon (of which many improvements have since been made). Fourth, Mr. Casby once again has recently introduced Casboard BBS software for the TS 2068.

More recently came the development of 1200 baud modem capability from Grey & Clifford Computer Products using Specterm 64 and the Z-SI/O card. This really makes long distance calling a whole lot more feasible economically. Further, it makes downloading/uploading much less tedious. It's difficult to describe unless you see it in action.

The last major development is the expansion of P.C. Pursuit. This allows unlimited modem to modem calls (after hours) for a flat $25/month. Previously, this service was only available to and from 12 major cities. Now you can call FROM over 17,000 exchanges and the number of cities has increased in number (check Appendix C for the PC-Pursuit information number for the latest cities added).

In this manual, we list those remote systems that have either directly supported T/S computers consistently over the past year, or are important electronic sources (such as MCI mail). In addition to providing good information about T/S computers, many boards also support file transfers. This feature allows you to upload and download programs and text files.

We also cover about 20 odd pieces of software and 6 pieces of hardware (not exhaustively, mind you). As I said, we tried to cover quite a bit of territory, and as a consequence, some of it has limited depth. But, we also tried to give reference for further information. If you take issue with anything said in this guide, please do so in the most widely available forum you can manage to access. Accuracy is far more important than our egos by a long shot.

Pete Fischer & Steve Ishii
March 1987

ACKNOWLEDGEMENTS

So many people helped produce this guide, it's hard to list them all. Jack Dohaney gave us the idea. Those who contributed were: Dave Schoenwetter, Tony Gomez, Mark Fendrick, Norm Lehfeldt, John Colonna, Rob Curry, Rich Moldovan, John Kuhn, Craig Shaw, Ken Collier, Tom Lyon, Kurt Casby, Thomas Simon, Sir Clive Sinclair (well, in spirit anyway), Rebecca Wieser, Julie Barrett, John Brown, David Hoshor, Barry Carter, Tim Woods, Paul Holmgren, Alex Burr, Charles Stelding, Carl Forst, Michael Carver, Paul Hill, Jim Showalter, Bruce Taylor, with VERY HEAVY technical support from Dave Clifford, Ed Grey and Gary Lessenberry (and I mean HEAVY). And of course all the sysops and co-sysops. Thank you friends, I hope the net result was worthy of your efforts. It was really gratifying to see all the cooperation we received from all over the country.

2

The Big Picture

C'mon it's EASY!

I honestly don't know why there seems to be such a mystery surrounding the use of tele-communications. It's hard to find words to describe the wealth of information, experience and free software out there waiting to be tapped. For example, have you ever spent hours or days trying to solve a problem, only to discover 6 months later that someone else has solved it a year ago? If only you'd known!

The electronic forum can act as a "Round Table" for the ZX/TS/QL community. As owners of limited edition computers, we're very dependent on each other for mutual support. If you take the time to read and understand the information in this document, you should be able to sign on to a remote database system, read and write messages, perhaps make some file transfers, and do whatever else the system offers. You will be safe in knowning you are doing all of this without making any serious mistakes, such as accidentally accessing the N.O.R.A.D. computer and launching a flock of ICBM's towared Russia (incidentally, recent motion pictures notwithstanding, there is no way you or anyone else could break into the defense department's missle launching system by mistake. They aren't even tied to standard phone lines).

I've encountered three major reasons from people as to why they don't make more use of their modems:

1) "It's just a bunch of kids!" While it's true that there are a large percentage of young people with modems out there, a good number are not. These "older" people carry on very mature conversation and share invaluable information on a daily basis. If you randomly choose two or three boards to call, the odds are good you may find young people pursuing their own form of entertainment. But, nearly every board described in this guide is not in that category. In ANY city of the U.S., you can find intelligent exchange if you are willing to look for it. Furthermore, these "kids" may turn out to know three times more about the machinecode than yourself!

2) "It's too difficult, I always mess up!" If you take a modem and terminal software out of the box and hook it up, it may not be totally obvious how it all works. Even those of us who've been using modems for years can always learn something new. That's part of the fun of it. Nowadays, there are some good guides and manuals to go with the software and hardware available. It is partly to address this confusion that this guide was written. It really is easy, friends, but if you miss ONE KEYSTROKE; just like with most software, its's not gonna work. For those working with MTERM II, we strongly recommend Barry Carter's manual, available from most T/S retailers or from Barry (See Appendix D). But by far, the surest way is to get someone who is experienced to take you through it step by step. Then, if you have questions, you can ask them. This "hands-on" approach works wonders. It would make an excellent demo for a User Group Meeting (I know we've tried it).

3) "It's too expensive!" It's true that long distance calling is not cheap. However, there are a number of ways to DRAMATICALLY reduce the cost. The first step is to get a Third Party Long Distance Service such as SPRINT or MCI. This will save you money right off the bat and costs nothing to begin the service. The next big break we've gotten recently has been the continuing expansion of P.C. Pursuit. What is PC PURSUIT? Ed Grey of G & C Computer Products has used this service extensively and provides the following description...

"PC Pursuit is a service provided by GTE Telenet (a US SPRINT company) that allows economical long distance DATA ONLY telecommunications. Unlimited off peak hours use of this service costs only $25.00 monthly. From practically anywhere in the U.S. you can call to 14+ major cities and connect with any other computers set up to handle remote access. This includes direct links with other computer users, acessing data bases or any other public access BBS. The service works well except for delays in connecting with host cities (occasionally). This is caused by too many users overloading the PC PURSUIT system. They are aware of (and expanding) the network to accomodate the additional users. Considering the priceof traditional long distance services, I think that PC Pursuit is a bargain. You can get additional information on PC Pursuit by calling their 800 numbers (see Appendix D) both modem and voice. Both calls are free, and at that price, why not check it out."

The next big break for us Long Distance Telecommunicators has been the availability of 1200 B.P.S. software and hardware. These are covered extensively in this manual, but suffice it to say that an XMODEM download at 1200 BPS takes 1/8th the time of a HEX download at 300 baud.

BBS ETIQUETTE

As with everything else that is good in this world, there are responsibilities that go along with telecommunications. Always remember that you are using someone else's computer system; you are a GUEST! Each system has it's own unique set of rules, so your first priority is to find out what those rules are and then obey them. Every person that has ever put a computer online has spent a lot of money to do so. While they don't expect nonstop pats on the back, it seems reasonable that they should at least be able to expect fair treatment from users. Every Sysop has their own idea of how they want their system to be run. Some are still in the process of evolution and are VERY interested in constructive suggestions. However, what may seem like a simple criticism to you may be very irritating to the Sysop. You only knew about the one statement. What you don't realize is that the Sysop has been finding nothing but complaints in the mailbox all week!

IT'S VERY EASY TO SIT BACK AND CRITICIZE, IT'S VERY DIFFICULT TO STAND UP AND DO SOMETHING PERFECTLY!!!

The fact remains that the Sysop has a large investment in making this computer available. Appreciate this and act accordingly. If you have questions about what is allowed and what isn't, most Sysops will send you information if you mail them a self-addressed-stamped envelope (see Appendix D).

Some Sysops like to chat, some don't. If you're calling locally or with PC Pursuit, it's important to respect the hour. Perhaps, you do your best BBS'ing at 2 a.m., but asking for a chat then is inconsiderate. If you're calling Long Distance, realize that the average person talks at 150-200 words per minute, but types maybe 20-30 with time out to compose thoughts. If you need one short question answered, and then plan to return to the BBS, then a chat is fine. But for conversation of any length, it's not cost-effective. Ask the Sysop if they have a handset connected and explain your plan. Once the O.K. is given, then pick up your receiver and (on the 2050 modem at least) remove the power supply plug to your modem. This will leave your computer completely intact, but stop the carrier tone.

Nearly all T/S boards require real names at Logon. Pseudonyms or "Handles" are generally disallowed. Also, when signing on, why not sign on just as you would introducte yourself in your own society. Please take the time to logon properly. Since we are a national group, we'd all like to know where you're calling from. Cryptic abbreviations like Ntwn, or Cdale defeat this.

Learn the command set used by the system. This guide contains the main menus of all the major boards at the time it was written, but they may have changed dramatically since. The first time you logon, call the HELP files and print them out if possible. This will save you much hassle, grief and money in the long run. Once you've mastered these commands, you can toggle the EXPERT MODE and then no menus will appear. Don't do this prematurely, however. There are a few things more irritating to a Sysop than a brand new user, usually a novice, who immediately switches to EXPERT and then stubles around, totally lost. Next they'll page the Sysop, or leave messages saying, "I can't get this thing to work!" Most likely, the information you lack can be found in the SYSTEM FILE AREA. But if you've read the system files, and still don't understand something, then by all means ask. Maybe you've discovered something that other users had been wondering about also.

When you're offered a place to leave comments when exiting the system, don't try to use this as a place to ask such questions. It is rude to the other callers to expect the Sysop to carry on a half-visible conversation. If you have a question or statement to make and expect a response, put it in the section where all the other messages are kept. This allows the Sysop to help many people with the same question with the least amount of effort.

Try to avoid simply "Pulling the plug", log off properly. Some systems don't realize you're gone, and sit waiting for input, uselessly. Also, you logon info may not be saved and you will have to reread messages you already saw. Occasionally disconnections do occur, but try to minimize them if possible.

There is a very significant percentage of BBS callers who are referred to as, "Silent Users." These callers logon, capture all the messages, and log off without leaving a trace of their presence. No one knows why this is. Partly, it may be due to phonebilliphobia, or fear of large phonebills. However, it is possible to leave messages without spending a great deal of time. See the section on "WRITING MESSAGES" for tips on this. But you will not only contribute to the value of the BBS, but to the T/S community at large and indeed, may make you some new and important friends. Stop for a moment, before you logon and think about what you may have done new with your system since you last logged on. Did you get some new software? Some new hardware? Read an interesting article in a T/S magazine? Just because you subscribe to a magazine, don't expect everyone else does also. Any new piece of information may be the seed which starts a long, involved conversation that you never dreamed at the time you left the original post. Most of all, ENJOY THE SYSTEM!! That's what it's for!

The Boards

This section my friends, was VERY difficult to write. On the one hand, you may have a Sysop who is just starting out and has a small message base but is putting in hours and hours to improve the board. Then, on the other hand, you have the not-so-quite-a-millionaire Sinclair user who is interested in telecommunications, but can't AFFORD to call a small board to help it grow bigger. What can I advise? If you can't afford to call a small board, then don't. However, there are a number of top notch boards; people with $3-4000 invested, try one of these. Perhaps, you might consider starting one in your city (especially if you're in a PC-Pursuit Target city, you will definitely get support from out of town). If you're not in a target city, understand that some of the sysops are planning a scheme to trade messages. Thus, adding to the total number of messages on any one board.

If you're interested in getting a board going (without requiring 1 cent in investment), see the section "How to start your own T/S board." The main information on the boards are listed in the back. Please feel free to xerox this table and pass it on to every T/S user you know.

Bill's Obsession BBS

PC PURSUIT - Yes

What started as a temporary board almost a year ago has blossomed into an impressive full time BBS. Over 300KB of T/S dowloads and 2 MB of CP/M files. The board has a section dedicated Timex message base (includes, all T/S computers and AERCO disk users as well). It's very easy to move around, it accepts "Stacked" commands. Bill Erickson (the owner and sysop) is also very helpful and works hard to improve his board all the time. The fact that he's accomplished so much in just under a year, tells you this! Bret Lanius is also performing Co-sysop duties on both the above sub-boards. It was Bill's grandson, Paul, who found a fix for the Modem 750 implementation on the Aerco RP/M disk program. Working copies of this program are available on this board (send them $2 and they'll send you a disk). Bill's attitude is that he doesn't want just any files stored, but only those that are worth the time and trouble to download. As a result, only the cream of the crop appears. Downloads for the TS2068 in Casby Xmodem, Specterm 64 Xmodem, HEX and ASCII, and also, CP/M files in Xmodem protocol are available ONLY by requesting the desired files in a message to the Sysop. The files available are contained in the file labeled "TIMEX.LST" which can be found in the D/L section.

COMPUSERVE

COMPUSERVE, in case you're not aware, is huge, unimaginably huge. If they froze the present contents and you spent the rest of your life exploring it, you'd never see a small fraction of the whole. For the purpose of this guide, however, we're confining our description to the T/S and QL sections of this service.

This is by far one of the best message bases for T/S and QL computerists available, and there are more downloads here than anywhere. There are typically anywhere from 10 to 25 new message posts daily. To reach this section, simply type GO CLUB at any function prompt. You will then be asked to choose a sub-topic area. Select # 4 for the general T/S area or # 6 for the QL area. You will find that people who visit the Timex SIG are very know-ledgeable about T/S related information. Almost any problem can be addressed by posting a message here, it's also a good place to get the latest news and information, and several vendors have Compuserve ID's as well.

Another big feature is the Wednesday night chats (online conferencing) where you can logon and chat real time with people from all over the country, generally very interesting, we are told. Neither of the editors currently owns a QL, so we depend on others who do. They say the QL section is reasonably active and most questions asked are usually answered in a day. Recently Xmodem was developed for the QL and was put up for download. Compuserve at one time was the only source of QL downloads, but this has since changed (see Timexchange & TSU BBS').

The download section is very impressive, with files for the TS1000 (uploaded with Z-COM), files for the TS2068 (in ASCII, MD-68/Byte Back, Mterm HEX, and Casby Xmodem protocols). About 100 TS2068 files in all. QL files are nearly all ASCII format, however the new Xmodem should change this. (Note: when Compuserve says 1200 baud, they're really running around 800. If you're familiar with 1200 baud operation, you'll be able to tell the difference.

FWKUG

PC PURSUIT – YES

The FWKUG is a relatively new board, hosted by the Fort Worth Newsletter editor David Baulch. David is a very prolific writer, putting an online newsletter on STARTEXT on a weekly basis as well as a 24 page newsletter for the FWTUG. This board has, as yet, no T/S specific message base, although messages can be left in the general base. Rather, the main focus here is on files for download. David has put up over 200K the last time we checked, Xmodem and HEX format files are available. Since this is a PC Pursuit city, it has a good chance for growth. There are also extensive CP/M files for download from a 44MB hard drive, and technical assistance in CP/M is gladly given.

I.S.T.U.G

This is one of the pioneer boards in T/S telecommunications. Willie Jones and Paul Holmgren began with the Tinyboard software but have since written their own unique BBS program. They now say it's 99.9% crashproof and the most amazing thing is they've made all these improvements without ANY extra hardware – just a TS 2068, TS 2050 and TS 2040. Since this is the board for the Indianapolis User Group, it always has the latest update information on the T/S Midwest Computerfest. Oh , for those interested in setting up your own TS 2068 operated BBS, you can contact the above people to purchase the modified Tinyboard software they currently are using which can be setup on any "unexpanded TS2068!" Some of the nice features provided for include: a real – time clock, the ability to print (if a printer is attached) the name of the logon, the time of logon, and all subsequent actions the caller performs (eg. reading messages, leaving messages etc.).

LOONEY BIN

The original Looney Bin was one of the most revolutionary experiments in T/S BBS technology. Richard Kelsch wanted a BBS for his TS 2068, so he wrote one! The software was all machine code. Although he possessed A&J Microdrives, he felt they were too slow. He really wanted a disk drive system, but the cost was too prohibitive. So, he simply built a 512K RAM board for his TS 2068 and that was that. "The price of the RAM chips was much cheaper than a disk drive." Next, he wrote a RAM disk machine code based program so he could utilize the 512K RAM for his BBS. The whole thing was online for many months and for those who had a chance to call were treated to a very slick BBS system. However, as all good things someday come to an end, sadly we report Richard's TS 2068 went down for repairs. In its place, the Looney Bin now operates off an Atari 512 ST. Yes, there is a separate Timex message base. Right now, there is 1 Megabyte of storage (700K as a RAM disk, 850K is a physical disk).

MCI MAIL

This is not a BBS at all, but an EXCELLENT way to send mail. I would love to see this as the unofficial post office for our T/S – QL community. It costs only 45 cents to send a 500 character message to any of over 50 countries! Using this system, we could communicate with fellow Spectrum and QL owners all over the world! For a complete explanation of the charges refer to APPENDIX F. MCI Mail also allows you to send hardcopy mail to the same 50 countries and use the TELEX system as well. The electronic mail can only be sent to another boxholder on MCI Mail. The box itself costs $18/year. Many T/S folks already use this system (Curry Computers, RMG Enterprises, Jack Roberts, Mark Fendrick, ZX Computing Magazine, Ed Grey, Les Brown and probably more).

NIGHT OWL SPECIAL BBS

PC PURSUIT – YES

The Night Owl Special provides a sub – board for the Chicago Area Timex User Group. It also supports a transfer file section which is, so far, relatively small, but there is good growth potential since it is in a PC Pursuit city. Activity on the message base is light to moderate, but Co – Sysop Gary Lessenberry is working on a scheme to trade new posts with other Timex boards around the country. This should improve the picture. The message base has an unusual READ function. It not only gives you the newest messages put up since your last logon, but also the original posts to which the new messages are responding. It prompts at the end of every sequence for your reply. This board is completely reliable in terms of operating hours, (24 hrs/7 days). Gary has assembled an excellent T/S text file section which includes files on current T/S vendors and an up – to – date T/S nationwide BBS list. There is support for TS1000 uploads/ downloads using Mini – Xmod and for the TS2068 using Casby Xmodem, Specterm 64 and Zterm 64.

OMNI NET BBS

Although located in New York, it is not currently available through PC Pursuit. Hosted by Al Hartman, long – time Sysop of the original Zebra Systems BBS, this board is a much simpler and straight forward board than the old Zebra BBS. There is a Timex Sub – board which can be accessed by entering the Special Interest Group menu item. No file transfers are currently supported. A frequent visitor is Mark Fendrick of Computer Shopper (T/S Survival Column), and ZX Computing Monthly (Across the Pond) fame. Some QL discussion appears here as a result. Mark also posts the "Sinclair Information Network" (S.I.N.) newsletter online here also. However, updates to the newsletter are very sporatic. There is also a product review & tips section available. Activity is light to moderate, however, with the closing of the ZEBRA systems BBS, we anticipate a higher activity on this board.

OWEGO FREE ACADEMY

These people deserve recognition. In the heart of IBM country, they maintain files on this board for Timex computers. There is NO T/S specific message base, only files for down – loading. Primarily, the files are related to telecommunications, but other types are available as well. The D. Schoenwetter Mterm/AERCO patch first appeared here. Dave is a member of the SINCUS group, but now works on the TS 1000 since his last 2068 died. The BBS supports both ASCII and Xmodem transfer (see section of Interpreting filenames). The T/S files are found in directory #9, and can be accessed by entering the stack command: F;9;11.

PLINK

Known more fully as American People Link (PLINK), this a national pay CHAT service. You can chat online with folks from all over the country. I know of at least one person who is hopelessly addicted to it. There is a Timex Specific message base on there. It has light to moderate activity, so if you're already a subscriber to this service, you might want to check it out. (Editor's note – As of this writing, a complimentary one hour token was being offered to new subscribers. Refer to the the Appendix for the (800) number for more information).

SERIAL PORT BBS

The Serial Port, advertised as Mount Clemens Fastest Growing BBS' supports a Timex sub – board. Co – Sysop, Les Brown operates this message base, and writes several accompanying text files "Notes from Les" and "Product Reviews." A frequent visitor is Mr. Barry Carter who wrote an accompanying book describing the Mterm II software features. Barry is very much into QL'ing these days, and if you want the latest info on this subject, this is the place to ask. Activity is generally moderate. The 7 – 10 PM time slot (E.S.T.) is reserved for "PAY" users only. The remaining hours are free. There is also a list of current T/S vendors and a relatively small file section which Les has recently begun to increase. The board is up 24 hrs/7 days. (Editor's Note – There was an indication that in the future 300 baud communication would NO longer be supported on this BBS; only 1200/2400 baud).

THE SOURCE

The Source currently offers no specific T/S message base to date. However, by the time you read this, things could change. Mark Fendrick does visit here on ocassion, and puts together a Timex newsletter. If you leave him a message to ID....BCA – 632, requesting the newsletter, he'll "mail" it to you the next time he publishes it. The Source is also very large like Compuserve. At 300 B.P.S. communication, it is more expensive than compuserve, but at the faster rates (ie. 1200/2400 baud), the rates are actually cheaper.

STARTEXT

STARTEXT is a pay system $10/month (refer to Appendix for details). Once the initial $10 fee is paid, there is unlimited access. It has 2 online newsletters and file transfer in HEX for the TS 2068. The newsletters come out on a WEEKLY basis! One is by the Dallas Timex – Amstrad U.G. and the other is for the Fort Worth S.T.U.G. These are the primary reason for getting on here, although you could send E – Mail to anyone else on line. There are no dedicated Timex sub – boards for general messages. The quality of the newsletters is amazingly high considering how often they come out. It is possible to get a one month trial password, simply by writing and asking, but you have no E – Mail capabilities on this basis. The system boasts a wide range of information including news and weather, etc.

THE TIMEXCHANGE

The Timexchange, advertised as the West Coasts' only dedicated T/S dedicated BBS, features 25MB of online storage capability. Current listings show about 800K + of T/S downloads and around 20 MB of CP/M files. The system is very easy to logon, and best of all, there is no time limit. Dave Clifford (of Z-Link and Z-SI/O fame) is the dedicated Sysop. Dave has worked very hard during the last year and a half to make this a truely first class board for Timex users. Callers range from all over the U.S. and even London. Besides the general message base, this board boasts an extrodinary range of downloadable software and text files. The file section supports downloads using Mini X-mod (for TS1000/1500 files which are available on request), and the TS 2068 using Casby Xmodem, Specterm 64 Xmodem (to understand the difference, see section "Downloads and Uploads"), also ASCII files for the TS 2068 and both ASCII and Xmodem for the CP/M software. Since Dave is the originator of the Z-Link twister board and more recently the Z-SI/O card, this board provides the latest updates and online support of these products and the Specterm 64 software. Available 24 hrs/7 days and extremely reliable. This is truely an incredible resource for the Timex community and worth a visit.

THE TSU

PC PURSUIT -

Another amazing innovator is Chris Raynak, sysop of the TSU BBS. Chris has networked an Atari with a Commodore to make this board. Mostly dedicated to Timex users, there are sub-boards for the TS 1000/1500, TS 2068, QL, Oliger Disk System, and a board containing a list of files descriptions available for download. The file section supports the above computers. All file transfer is in either Xmodem or ASCII, no HEX. Now up 24 hrs, 7 days (weather permitting), both 300/1200 baud is supported. Thanks to the presence of the Oliger Sub-board, Mr. John Oliger himself calls in on occassion to check the activity and answer any questions regarding his products. Chris recently purchase a QL kit, so we anticipate more activity and innovated projects for this computer. Activity has picked up recently, and the potential is very good for continued success!

RMG ENTERPRISES BBS

PC PURSUIT - YES

A long time supporter and dealer of T/S products, Rod Gowen has set up a TS 2068 based BBS for the loyal Timex supporters of the great Northwest. What began as a trial run has seen enough participation and interest from callers all over the U.S. Because of this, Rod feels confident that the RMG BBS will continue to operate throughout the vear. ("As long as there are callers, there will be a RMG BBS!").

The BBS is one of the first to use the new Casboard 2068 software. In addition, the system configuration includes an AERCO FD-68 with a quad density drive. This will provide an online memory capacity of 1.5 MBytes (800K for messages, and another 800K for download files).

Several different message bases are currently available and include such topics as QL information, general interest, CCAT/S section, 1000/1500 ZXers, 2068 topics, FD-68 files and a weekly special section (the user can find some excellent prices on selected items which can only be taken advantage of by calling the BBS). Overall, Rod has been very impressed with the Casboard software. He encourages all who call to please check out all sections and not to limit themselves to just a couple of message bases. Currently, the BBS is operating on limited hours (10 pm - 12:00 PST).

TYLER TIMEX BBS

Another relatively new board dedicated to Timex Users is setup in Tyler, Texas by Charles Stelding. The Tyler Timex BBS is also operating off the new Casboard 2068 software program. The system configuration includes a TS 2068 with a two-drive AERCO FD-68 disk setup. Several message bases are available and include: general interest, Timex messages, Timex News & Reviews, Download section, and Private message to the Sysop section.

In addition to supporting the Timex users of the Ft. Worth area, callers from out-of-state also visit frequently. Currently, programs available for download are mostly for the 2068, and uploading has not been permitted. This will probably change in the near future as the capability to upload programs using the Casboard program are provided for. Current operating hours are restricted to 6 pm - 8 am weekdays and 24 hours weekends. (Editor's note: Although not totally related to telecommunications, the Sysop has written a very innovative Desktop Publishing type program for the TS 2068. For details and a sample printout, contact Mr. Stelding).

KING'S MARKET BBS

The listing of this particular BBS in the guide is a perfect example of the value of telecommunications. While both editors thought they were aware of all major BBS across the U.S. that supported T/S computers, lo and behold one slipped through the crack! The King's Market BBS was discovered from a message posting on another T/S BBS and upon calling, we found a relatively active Timex sub-board.
The Timex section is organized by Frank Holland and Roger Hunter. The message base is home to the Mile High Chapter Timex User Group based in Denver, Colorado. The board supports all T/S computers (from the Micro Ace to QL) from technical information to "emotional" support. In addition to the regular message base, the monthly user group newsletter is available for viewing or downloading. The information that I saw contained in the newsletter was very good and well worth capturing in your buffer for saving and later reviewing.
Uploading and download of files is available (in HEX, ASCII or CP/M Xmodem protocol). The number of files available currently is few in number. In addition to supporting T/S computers, King's Market offers a vast and diversified menu of special interest sections (Timex being one of them)! Other areas of interest include: a writer's section, book discussion, culinary interests, and many other computer type sub-boards. The BBS operates 24 hours a day, and is setup for 300 or 1200 baud communication.

LOCAL TECH BBS

Another unknown BBS that caters to Timex computing was discovered as a result of the original T/S Telecommunications Guide. A reader of SyncWare News saw the article on the guide and requested a copy be sent to him. In his letter, mention was made of the LT BBS in Lancaster, California which had a T/S sub-board as well.
True to his word, there is indeed a Timex sub-board on the LT BBS. The author of the letter, Jim Smith serves as the Co-Sysop for this section. The board is visited frequently by the several local Timex supporters. They would encourage and welcome outside callers to share programs and information with them. Uploading and downloading is available (the board has a very large file area) and supports ASCII, HEX or Xmodem transfer protocols. Jim currently has plans to setup his own BBS supporting Timex computers in the near future.

J.J.'s FIDO BBS

Located in Las Cruces, New Mexico, this board serves as a central focus for The Timex Sinclair Amateur Radio Users Group. There is no Sinclair-specific message base, but messages are exchanged through the general interest area 1. They also support a Download section. Here may be found future articles for the group's newsletter:"QZX". They also actively support the use of the FIDONET, (See a description elsewhere). This group also does a lot with Packet Radio, which combines the Bulletin Board system with Ham Radio, allowing cheaper Long Distance communication. The Fido address is Net 15/ Node 6. The Co-Sysop is ALEX BURR. For more info, send a large S.A.S.E. to Alex at:2025 O'Donnell DR./ Las Cruces, N.M.88001

The TIME WARP

This started on an Unexpanded 2068 using Tinyboard software on a phone in the Dormroom of sysop Jim Rodlin. Jim has since rewritten the software many times and has ambitious plans for future versions (see his description). Jim is out of school, and the old number is no longer good. He plans to put it up again on a new number sometime in the near future. He also plans to get a disk drive to make it a real system. Down until further notice.

PDSE (Public Domain Software Exchange)

This is breand new board in the San Francisco Bay Area, which is also accessible via P.C.Pursuit. SigOp Pat Morrissey has done an EXCELLENT job of setting this up. There is a Sinclair-specific message base, as well as Uploads/ Downloads for the 1000, the 2068, Spectrum and QL. You won't be able to read the messages on your first call, but you CAN view the DL listing (list "L 44" off the file menu). The T/S SIG is message base #10. Anyone planning to Upload/ Download is STRONGLY encouraged to capture Bulletin #11 and study it first. It explains the system of file extensions-the most elaborate so far in the T/S world, with 30 possible combinations. ASCII and XMODEM available only. With luck, the Bay Area users will not make the mistake other cities have made, and will realize what a powerful tool has been set before them.

BUS DEPOT

This is also a fairly new board, run on a Fido. There IS a Sinclair-specific message base, as well as Uploads and Downloads for both the 2068 and the 1000. Message activity is light to moderate. The co-sysop, Tom Phillips, seems very enthusiastic and helpful. Since the board DOES support Fido NETMAIL, Tom is very happy to exchange messages through that system. The Bus Depot's Net /Node #'s are 112/4. The Board is a collective effort of the Central Florida User Group.

Belden Hill Users BBS (BUBBS)

Located in Upstate New York, this board has no Sinclair-specific message base, but it DOES have files for DL (see appendix). These are found in File Area #6. This board is used by the SINCUS User Group. Most files are for the 2068, although there are some RLE's and Text files of general interest to all Sinclair Users. Local contact person is John Colonna, you can leave mail for him on this or Owego Free Academy. (If you ever saw posts about a BBS called, "TUBBS", this is the same one, under new management)

THE TOXIC DUMP

This has a sub-board titled "TI/99-Timex". It gets very little traffic at the moment, but might be of use to locals. Not recommended for Long Distance, and NOT accessible via PC Pursuit. No Files.

THE PGHTSUG BBS

This is run by Joe Siciliano of the Pittsburg TS User Group. It's a Casboard, run on a 2068 with AERCO disk drives, does have downloads and has medium traffic levels.Our apologies for an incomplete review.System Password is "PGHTSUG" (all in Capitol letters)

Flexi-BBS

This has been up (part-time) in Boston, run on an unexpanded 2068 using Casboard software. Temporarily down until further notice, it IS accessible via PC Pursuit. The Sysop is Bob Cutter.

QLCOM BBS

This board is run by the owner of Quantum Computing, Frank Toemay. It was first put up on a QL, but then taken down so that development could take place on the QL BBS software, and so it is currently replaced by a modified version of the ISTUG software on a 2068. This board acts as a temproary message base until the real QL BBS is ready. No Downloads currently, only message base.

Sysops Tell Their Story

System Operator's (SYSOPS) are a special kind of computer person. Operating a BBS takes a lot of dedication and hard work to maintain a quality service. Those of us who utilize their BBS systems owe them a hardy THANK YOU for a job well done. Some of the Sysops (and Co – Sysops) of the bulletin boards mentioned in Chapter 2, gracially provided additional information on their systems. We think you will find their comments interesting and informative.

BILL ERICKSON – BILL'S OBSESSION BBS

The system is an RBBS 14, constantly updated to perform better with T/S computers. Most menus have been modified to read better on a 32 column screen. Bill's Obsession will accept standard MTERM uploads with no modifications up to a full buffer. Feel free to make suggestions and comments about what you would like to see on the board. The more input from callers, the better the board will be for all.
P.S. It would be better if Timex users would not depend on a few to do all the uploading.

DAVID BAULCH – FWKUG BBS
Not only do they have a tremendous message section for various technical problems and software problems, but the download section, mainly for the Kaypro 8 – bit and 16 – bit, has some great software for CP/M for those with the AERCO 2.2 CP/M and the Zebra CP/M 2.2 disk systems. We will be trying to set up other sections for the TS 1000/1500 and Spectrum. (Since I know very little about the QL and the Amstrad models – nothing will be tried as of yet.) But, if you're in need of help on practically anything or any computer, the users are extremely helpful.

RICHARD KELSCH – LOONEY BIN BBS
The Looney Bin BBS is running on a Timex/Sinclair 2068. It has 512K of RAM disk for use as a message only storage device. The program is called "Spiffy BBS", and is written by myself. The only "physical" mass storage that I have is an A&J Microdrive that is only used as a message backup. Using it as a mass storage device is both slow and inefficient. That is why I designed the RAM expansion device, to solve this problem. The price of the RAM chips was much cheaper than a disk drive. The board does not support uploads and downloads yet. I will put one in just as soon as I can get enough money together to buy a disk drive. It is a board that has a lot of Timex/Sinclair support. It is intended as a system to "get away from it all." There are user submitted jokes that come up on the menu, right before the prompt, at random. I really don't care what type of computer is used, just as long as they respect everyone else's computer. (I don't like the phrase, "my computer is better than yours.") I also am glad to answer any technical questions about the system and any future products to be released by Membrain Microcomputers. If anyone would like to know more about my board, they are welcome to a conversation on the phone. (Editor's note – The original response by Mr. Kelsch describes his former setup. His latest Timex projects include making the Spiffy BBS commercially available as well as a RAM controller project. This exciting piece of hardware provides the ability of a TS 2068 to expand its memory to 16 megabytes! Be on the lookout for this one).

GARY LESSENBERRY – NIGHT OWL BBS

The Timex Zone was set up to support the efforts of the scattered Chicago area Timex users, although all Timexers are welcome and encouraged to call in. We are very receptive to any and all constructive suggestions for changing the Timex areas. We are accessible via PC Pursuit. The Timex Zone, like the Chicago Area Timex User Group (C.A.T.U.G.) is still very young and there will be many more changes with the BBS as we gain experience. The system has 7 mega – bytes of storage. TS – 1000 and TS – 2068 file transfers (text and programs) are supported using Xmodem protocol only. One quirk, the system stores data in 256 byte blocks and the Timex Xmodem transfers are in 128 byte blocks, thus, a file that is listed as 6 blocks (1536 bytes) will actually transfer in 12 blocks. Areas of interest to Timex Users on the Night Owl Special are: The Timex Zone (Command B2), The Timex File Transfer Area (Command UD), and the Timex Info section of the General Library File Area. Currently there are (3/87) some 20 + files available for download to either the TS – 1000 or TS – 2068. Both the text and the program files are available in the Timex File Area. Eventually, the Timex text files will be located in the general file area under Timex Info. For a detailed list of how to get around the Night Owl Special BBS, a person should send a SASE to: The Night Owl Special BBS, P.O. Box 641, Wheeling, IL 60090. Enclose a brief note with the envelope to request instructions.

WILLIE JONES – I.S.T.U.G. BBS

The major features of the system were designed to copy BBS selection on much bigger BBS'. Feature operation and selections were designed to work as one might be used to on some other BBS'. We offer a Quick Scan of the message base, a list of callers (if they call more than once). Caller has control of program moving to next feature at proper points. All messages left, fill the first available slot. Any message to the Sysop is LPRINTED.We currently have a 40 message base of 600 characters each. For Sysops of this program, the caller's name, time online, message numbers left, and messages read log are LPRINTED. All statements to callers, (Logon intro, bulletin and Quit BBS statements are in DATA statements allowing easy editing. To prevent the program from crashing when the caller's fat fingers commit an error that one would not expect, an extra amount of eerror trapping had to be brainstormed and then planned for. As of this date (9/86), we are 1/2 way to implementing a real time clock allowing us to add a more professional look to the caller. As well as date stamping the messages and Sysop LPRINTS.

When owners have compared our BBS with the others running on a T/S, they start demanding a copy of the program to run themselves. We will admit that the amount of callers has been less than we had hoped. When we informed those using Compuserve that we were up and to call, the response was less than we expected.

CHRIS RAYNAK – TSU BBS

The TSU is a system that tries to help a user in any way possible to get the most out of their computers. It may be downloading programs, or it may be finding spare parts for pieces of hardware. Users call from California to New York, from Canada to Texas all having Sinclair computers as their common bond. In the more distant future is the networking of a third system in the TSU line, the 2068! A recent breakthrough in a complete DOS for the Oliger Disk System in our local group will allow me to write a true BBS for this setup.

The change to 1200 B.P.S. modem made it necessary to remove the Commodore from the system, but now it is back online. As the system now stands, it has just over a MEG of storage, with over 200+K of T/S Downloads and 60K of QL Downloads. Users can write me for more info, but must include a S.A.S.E. A bulletin board is only as good as it's users. If you ever decide to call the TSU, have at least one message ready, or one file to upload. If you just read messages, and download all you can get, but never contribute, a system cannot grow. Your activity also has a bearing on what you can access and what you cannot. So why not join the fun instead of being an observer?

CHARLES STELDING - TYLER TIMEX BBS

I have modified the CASBOARD to include 50 registered names and ID #'s. It will automatically assign a new caller an ID and he must use it for the next logon. Another modification gives the exact time of day when each message was written which then appears on the message. There are 5 message bases, two of which are dedicated to Timex Computers. Downloads are available in either Hex, Ascii or Xmodem. Many unique programs are only available on this BBS, most are for the 2068. It is run on a Timex 2068 with two AERCO Drives. I may go to a CP/M system, but the Casboard seems to work fine.

ALEX BURR - QZX BBS

There have been some important changes in the bulletin board run by the Timex Sinclair Amateur Radio Users Group (TSARUG) for hams who use Sinclair Computers. The main bulletin board, which features advanced copies of the articles for the group's newsletter, QZX, has been moved to (J.J.'s Fido)(505) 522-7081. An East coast bulletin board has been set up in North Carolina. It can be reached at (704)547-4185 (Teacher's Pet). It is available during evening (after 5 PM) and early morning (before 9 AM Eastern Time) hours and all day weekends. Both BBS' are standard FIDO bulletin Boards (the first is net 15/node 6 the second is net 18/node 9). The Sinclair Area for the first is area 18 and for the second area 7. It would be very easy to start a seperate T/S message base but I do not think it would be worth the trouble now. Most, practically all, the files in the Sinclair area are ASCII files. The Board will accept files in ASCII, HEX, XMODEM and several other protocols. Our relationship with the sysop is very good. It was QZX which started the BBS. The BBS will accept all the files we want to put in. For more information about TSARUG, the bulletin boards, or QZX (the group's newsletter) send a SASE to Alex F.Burr, K5XY, 2025 O'Donnell, Las Cruces, N.M. 88001.

LES BROWN - SERIAL PORT BBS

The Serial Port is running on an IBM compatible computer with 4 meg of hard drive capacity. The Timex Computers are supported by a SIG on a special Sub-BOARD. I write a small column on the sub-board but lately I have been a little short on material. I would be willingly put up anyones articles they care to send me on any Timex subject. The articles can be written or typed or best of all an MScript file. The Port has gone through a number of changes, although they still support 300 baud you cannot use the online games unless you have paid a $10.00 yearly dues or have 1200 Baud. They also support 2400 Baud. The best change is that you can upload a program to one person only, and only that person and the SYSOP can see it. This is performed much in the same way that you would leave an E-MAIL message but you can use any of the data transfer protocols available. This way if a friend has a CP/M file formatted for a computer that your system cannot read he can leave that software to you as E-MAIL.

JIM RODLIN - TIMEWARP

TIMEWARP is a cassette-based BBS program, written in machine code, for an unexpanded TS 2068 with modem and printer. It features two small message bases, a Bulletin file, chat mode, online clock/calendar, userlog with passwords, help + info screens, and a daily message. A new mail check is done at login, and other information (last login, logs so far, last message read) follows. The message base section allows a user to read, write, scan, and delete messages. Private E-Mail is also supported. All messages are dated. Feedback is dumped to printer to conserve memory. There are 3 levels of access: Sysop, Regular and Restricted. NEW users are restricted to read-only and feedback. Registered users get full access. A Co-sysop may be given zero level access which permits full sysop control. All system functions may be performed remotely as well as from the keyboard. Conversely, a user may log in from the keyboard as well as via phone. My BBS project began last September (1986) when I downloaded TINYBOARD from a board 3,000 miles away, only to find out that it didn't work well. I studied the program until I understood how it worked, and completely rewrote and expanded it until I ran out of memory (very quickly). The finished product was the original TIME_WARP, written in BASIC, very slow but otherwise OK. Then CasBoard came out and completely blew away TINYBOARD and it's offspring. Rather than conform with society and switch to CasBoard, I decided to redo TIME_WARP machine code and add some features that weren't on other T/S Based BBS'. The result, TIMEWARP, attempts to mimic the functions of larger computer systems (userlogs, remote system control, timed functions, etc.) It is a prompted, rather than menu driven system so it takes less time to use over long distance calls. The TIMEWARP BBS is open to all computer users, but it has a few areas of interest it concentrates on: Artificial Intelligence, TS Programming and (of course) Timex in General.

5

Message Bases

READING MESSAGES

To many people, the message base IS the BBS, and for them that's where the action is. It might be argued that BBS' can be classified into those which are primarily Message Base BBS' and those which are primarily for downloading/uploading. However, most T/S boards can't afford this specialization and generally try to provide both functions. The message bases are surely the easiest part of the board to access, and most people see the message base. By my count, we have at least 29 message base computers with a total of over 40 boards and sub-boards which are Sinclair-specific. This seems pretty amazing, if you think about it, and those bases have passed many megabytes of messages and friends; some extremely useful, others not so useful. Reading messages is fairly simple on most boards (see the chart in this chapter for the commands used). It's very advisable to capture these messages in your buffer and read them off-line, save them to tape or disk and keep them. There may be a number of messages there which seem absolutely meaningless or useless at the time, but six months later, they're pure gold! For details on using the buffer capture feature, refer to the chapter on Downloading. The generalized procedure for reading messages is as follows: 1) Get on the Main Menu or sub-board if necessary (on many boards such as the Timex Exchange, Looney Bin, ISTUG and other tinyboards, there is but one main message board). 2) Once on the main menu just enter "R" for read. It will usually ask you for more info, (ie. do you want to read messages in forward order or reverse, etc.). For your convenience, some of the sub-menu message commands from the boards discussed in Chapter 2 are presented in the Appendix. 3) If you don't understand the menu commands, most boards allow you to type "H" or "?" for online help instructions.

WRITING MESSAGES

Each BBS has it's own 'editor' which allows you to input messages; these vary from board to board. Most, for example, accept 2 carraige returns (CR) to signify the end of your input on a message, some don't. It's best to scroll through the help file with your buffer open, and then enter a message. Then print this buffer out when off-line and study it. Once you've done it a few times, it becomes familiar and easy. Many users shy away from entering messages for many possible reasons, 1) They may think of themselves as not having a great deal to contribute, or 2) The atmosphere of a long distance call gives them "Writer's block." I hope I can help solve these two problems right here. You must understand that posting messages are the basic element of a Message Base. You may not be the best Machine code programmer in 4 states, but that doesn't mean you have nothing worthwhile to say. Even if you just ask a question, it can be valuable. Because there may be someone on that board who knows exactly how to solve that problem and 5 people who have been wondering about it, but never thought to ask. By simply asking the question, you've helped out those 5 people (and maybe others who call in weeks or months later). Say you bought a new piece of hardware or software. While no one expects you to give the last word in review on it, a simple general impression of how you like it or dislike it would be beneficial to all who may be considering also purchasing the same item. In general, any discussion is valuable, and can further lead to some excellent conversation and perhaps generate additional messages.

Now, about that problem of "writer's block..." Everyone has their own way that's best suited to composing a letter. Some people MUST have a typewriter, others like to write long hand. But the atmosphere of a long-distance telephone call and a hunt and peck typing method are not a good combination for anyone. There are a number of techniques to beat this problem by the use of your buffer and/or macro keys. Some of these techniques are described in detail in Barry Carter's Manual on using Mterm II (Refer to Appendix for more information). First however, let me describe the editor in general. Let's say for example I choose "L" off the main menu to leave a message. The first prompt I receive is "WHO IS THE MESSAGE TO?" Here, I must enter the exact name of the person I'm addressing it to. If the spelling is incorrect, the input may be rejected (ie. some BBS programs search the user log to find the matching name, if not found then the input is treated as invalid). If I don't know how this person spells his or

her name, you can sometimes check this out using the User Log command at the main menu. You could also enter ALL or SYSOP as a substitute for a specific name. Now that I've entered the correct name, the next prompt will be "WHAT IS THE SUBJECT?" I can put just about anything for a subject, but since its purpose is to allow those who SCAN the messages to get some idea what this message contains, it is best to be somewhate descriptive (eg. TS2050 modem pokes). It then may ask you if your want the message to be "PRIVATE?" If you do (note, most private messages can only be read by the person to whom the message is directed to) then type "Y." You then may be asked for a "PASSWORD." Unless you have an arrangement in advance, just hit (ENTER) here. The purpose of the password is to prevent the message from being killed (ie. deleted) by the wrong party. However, if you do enter a password, and the intended recipient doesn't know the password, they will not be able to read or kill it either. Finally, you will be given a prompt like "ENTER MESSAGE TEXT." At this point, you can simply key in a message just as you would on a typewriter (with some important differences). Some boards have a feature called Auto Wrap, other do not. For those that do not have this feature, once the end of the current line is reached, you must hit (ENTER) to start the next line. For those with Auto Wrap, characters can typed to the end of the line and will then automatically "wrap" to the next line eliminating the need to hit (ENTER).

On most systems, to signify the completion of the message, two carraige returns (ie. two ENTERS) will illicit a special editor menu such as – (L)ist, (C)ontinue, (E)dit, (S)ave, or (A)bort? If you choose, continue, you be able to simple add on to the message you have so far. If you had a spelling mistake,and you want to go back and fix it, then key in "E" for edit. You will need to know the line number on which the mistake occurred, and sometimes the exact text you input on that line, character for character, space for space. When you're all done and satisfied, enter "S" for save. There will be a slight pause and the host computer saves the message to disk. If for any reason you miss this last step, (eg. the message got all typed in and then a disconnection occurred), the message would be lost. In this event, you will have to re – enter the message and once again issue the save command. Now let's examine how we can automate this process so you don't have to hunt and peck online.

	SOFTWARE	READ CMD	ENTER MESS. CMD	'AUTO WRAP'	CHARACTERS/LINE MAX. # OF LINES
BILL'S OBSESSION	RBBS-PC	R	E	Y	70 char x 38 lines
COMPUSERVE	N/A	R	L	Y	80 char
FWKUG BBS	MBBS	R	E	Y	72 char x 16 lines
ISTUG BBS	ISTUG	R	L	Y	534 char max.
LOONEY BIN	ATARI	R	E	Y	80 char x 20 lines
MCI MAIL	N/A	READ	CREATE	N	80 X (no limit)
NIGHT OWL		R	P	Y	80 char x 50 lines
OMNI NET	TBBS	R	L	Y	2048 char max.
OWEGO FREE ACAD		R	E	Y	
PEOPLE LINK	N/A	/R	/P	Y	
SERIAL PORT		R	L	Y	75 char (2048 max)
THE SOURCE	N/A		POST	Y	80 char
STARTEXT	N/A		MAIL		
TIMEXCHANGE	MBBS	R	E	Y	72 char x 16 lines
TSU BBS	BBCS	A	C	Y	132 char x 14 line
RMG BBS	CASBOARD	R	W	Y	255 char x 18
TYLER TIMEX	CASBOARD	R	W	Y	255 18
KING'S MARKET	TBBS	R	L	Y	132 char-2048 max
LOCAL TECH	TBBS	R	L	Y	132 char-2048 max

USING YOUR BUFFER TO PREPARE MESSAGES

By far the easiest way I've found to use your buffer to prepare messages prior to logon is with the ZTERM64 program which allows you to type directly into the buffer just before you call the BBS. It will also insert carraige returns at the end of each line or at the end of each paragraph automatically or not at all if you choose. The great advantage to this system is you don't need to load any other software besides the terminal program and you don't need to save it to tape. The disadvantage is that there's a possibility you won't be able to get online to the desired BBS (eg. line busy). In this situation, you can either wait patiently until the line is free, or save the message you wrote to tape for later loading, or simply clear it and call some other BBS. You can also type into the buffer of Mterm II (as described in Barry Carter's supplementary Mterm II manual). Mterm II does require connecting in half duplex, with linefeeds ON and going into the terminal mode. From there, anything you type will go into the buffer (provided the buffer is open, of course).

Another alternative method is to use REM statements. Here, you would write a letter as you would put remarks at the beginning of a BASIC program. For example:

```
10 REM Hello John, glad to hear from you again (ENTER)
20 REM The info you're asking about is in TS (ENTER)
30 REM Horizons. I forgot which issue. Early (ENTER)
40 REM this year sometime. Good Luck, BOB (ENTER)
```

You could either save this program to tape as is, or you could have loaded Mterm II first, then escaped to BASIC and typed this in. Obviously, such a short message would be no problem to input while online, however it is only an illustration. When you're ready to input the message itself, make sure the CONversion setting is set to REM conversion, then just choose "T" for transmit from the data buffer menu. Your message will then be entered on the BBS minus the line numbers and REM statements. Only "Hello John, glad to hear from you again...." etc. will go to the host computer. Once the whole message is up, hit (ENTER) twice to tell the host system that you're done inputting the message. You will then be given the editor menu which was described earlier. Always (L)ist the message just to verify that all was received intact and without errors. If it's missing something, you can always edit the message. Then finally, be sure to (S)ave the message when you're satisfied. Using this method could very well cut a lengthy message online to a couple of minutes.

One thing I haven't explained is fitting the message into the format of the host (or BBS) system editor. If the BBS editor doesn't have autowrap, then only a limited line length is permitted. This may be 80 columns, or the screen width you indicated when you first logged on the system, or perhaps some other number pre-set by the BBS software. If this is the case, you need to know what that limit is so you can tailor your REM statements accordingly. Also, there is a limit on the maximum number of total lines for a given message. If you try to upload a 35 line message to a host system that only allows 34 lines maximum, the last line will be lost. Some boards (such as Bill's Obsession BBS) has the choice between (L)ine or (B)lock entry for the input of a message. With line entry, you have a normal setup – that is, whatever your screen width input is, designates the length of a line with each line terminating in a carraige return. For block entry, a full 256 characters can be input in a single string without a carraige return at the end of each line. This can be easier to manage than using a-line-at-time approach.

If the host you are dealing with defines your line length as the same number of columns you entered as your screen width, you can change this by selecting the (U)tilities section off the main menu. This will allow you to write longer messages. One other method that could be utilized is to define the Macro Keys to enter a short message (eg. logon name, password etc.). The use of Macro Keys in Mterm II is explained in Barry Carter's Mterm II manual and those interested should refer to this document.

E–Mail

E–mail or electronic mail is a simply a message, however the sending and receipt of this type of message is confined to the sending and receiving party only (in most cases the Sysop can view these too). Inputting procedures are essentially the same as those outlined for regular messages. However, in some boards (eg. TSU BBS), a special area is accessed to send or read E–mail messages.

MCI MAIL

MCI mail is an international form of E–Mail. It allows you to send an E–mail message up to 500 characters in length for only 45 cents. This message goes instantly to any of over 50 countries around the world. One catch is that both you (the sender) and the recipient must be MCI "boxholders." The service costs $18/year as a flat fee. Then you are billed for messages you send separately. If your message exceeds 500 characters but is less than 7500 characters, then it will cost you an additonal $1. An additional dollar after that for every 7500 characters on top of that. The other provision, is that the recipient must check their mailbox (call in on their modem). If they are not expecting any mail, they may not encounter the message for days. As I mentioned earlier, a number of those in the T/S community subscribe to MCI mail, and it can serve as an excellent meas for those of us who are serious to communicate.

It also has other features, such as being able to send a hardcopy letter to people overseas. That is, it travels to the country in question electronically. Once there, it is printed out and either dropped in the local mail or delivered by courier (depending on how much you want to pay). For more information, see the Appendix F– "Pay Systems."

FEEDBACK TO THE SYSOP

This is a private mail like function which goes straight to the Sysop. On some systems, this is the only place you can post when you logon for the very first time. As noted earlier, this is not the recommended place to ask questions. If you have a question to ask, then ask it in the general message base. That way, when the Sysop answers it, the reply can be read by all other callers, and possibly clear up some confusion that other users may have been experiencing.

CHAT MODE

You may find out about the CHAT mode without realizing it. You may be having trouble one day and suddenly on your screen will appear, "Entering Chat Mode..." This will be the Sysop or Co–sysop sitting at the terminal typing in real–time. They may offer advice about what you can do to accomplish your goal, or they may just want to say "hello." Chatting is very pleasant, but if you're calling from long distance, be mindful of the fact that you can burn up to a half–hour in no time. It's not the cheapest form of communications. However, if you're calling local or on PC–Pursuit, there's no problem. CHAT away to your heart's content.

Downloads and Uploads

Contrary to popular belief, the process of downloading and uploading files is EASY! It is far more complicated to use Mscirpt or Tasword 2 than it is to download a program. First of all, let's talk about the easiest form of downloading, the capture buffer.

THE CAPTURE BUFFER

What the capture buffer does, basically, is to take everything scrolling down your screen when you're online, and throw it into memory. With some terminal programs, it will be saved to disk or microdrive automatically. With others, you have to do the save manually. Comparitively, the buffers from the various terminal programs are as follows:

PROGRAM	BUFFER SIZE	METHOD OF DATA STORAGE
Z-COM (with 64K)	48K (approx.)	REM statements only
MINI-XMOD (64K)	14+K or 11+K*	REM statements
Mterm II	27 + K	Binary file
Mterm II + Loader V	27 + K or 19 + K**	Binary file (Mscript Compatible)
Spectraterm 1.3	32 + K	REM statements only
Zterm 64	17 K	Binary file (Mscript Compatible)
Modem753	To disk auto.	Binary file
Specterm 64	31 + K	Binary file (Tasword 2 Compatib)
QCODE	To disk or microdrive	Binary file

* 11 + K with 16K Rampak ** Loader V comes in 2 versions. One doesn't alter size of the buffer, the other version does.

Note that it is possible to save to disk, microdrive or possibly to tape WHILE-ON-LINE! This is especially easy with disk as it takes but a few seconds to acomplish. Those terminal programs which have the capability to save to disk or microdrive offer a tremendous feature. This is particularly true if you capture data at 1200 baud since, at this rate, the buffer will fill up very fast. (Zterm 64 was originally intended to automatically save the buffer to disk or microdrive, but to date, this feature has not be implemented by Zebra Systems).

USES FOR THE CAPTURE BUFFER

1. To capture menus, help files and system rules
2. To capture messages
3. To capture text files

The use of the capture buffer is vital to your entire telecommunications experience. Your first use would be to capture all the menus, help files and system rules for each BBS. The first two items (menus and help files) should then be printed out for future reference. I find it useful to xerox these since the paper is better and you can duplicate the information on both sides. Sometimes up to four menus can be placed on a single side of a sheet. I then put these in a loose leaf binder which can easily be amended (Sysops are forever changing their systems in their continuing effort to improve the BBS). To this, you can also add your own personal notes to help you remember things the next time you call. It was our original intention to include ALL this information in this guide, but this alone would account to over 20 pages. You'll find in the Appendix selected menus from the BBS' described earlier.

Now, you can see what files are available. Text files are usually indicated by the file extensions (ie. the characters to the right of the ".") as either ".TXT" or ".DOC" (short for documentation). Let's try capturing the documentation file for the program RLEPRO. To view this file, type the CP/M command "TYPE RLEPRO.TXT" at the "D2>" prompt followed by (ENTER). Make sure your capture buffer is open before issuing this command though. The contents of this file will then be displayed on your screen. As one screenful of information is displayed, the additional lines will scroll on. At any time, you could type CTRL S on the keyboard (for Mterm users this is represented by holding the CAPS SHIFT , 7 , S keys in succession) which will halt the automatic scrolling and allow you to view the information at your own pace. To resume scrolling, simply type CTRL Q. For this example, RLEPRO.TXT is well within the buffer capacity (as evident by the 4K notation next to the file name), so the entire file will be stored. You can then save the buffer to tape for viewing at a later time.
In the event, the file size was greater than your buffer capacity, an alternative might be to print the file on your printer (either the TS2040 or full-size printer) by setting Mterm, Zterm 64, Modem753, or QCODE for continuous printout. In this case, you would have your buffer closed. Remember though, programs like Modem753 and QCODE have the capability to save directly to disk or microdrive, so you shouldn't have a problem of a limited buffer capacity.

SAVING THE BUFFER WHILE STILL ONLINE

It is possible to save and clear a buffer while still online. Most BBS' will recognize the CTRL S command to halt the screen scrolling. Therefore, if your buffer is reaching capacity, issue the CTRL S command to halt the transmission. Other methods of interrupting transmission (without having to logoff) are CTRL A, CTRL K , CTRL X or CTRL C. Which one works as far as aborting the program will depend on the type of BBS software system. Once you're at a spot where the host system is waiting for an input from you, simply escape to BASIC (for Mterm or Zterm 64 programs) or enter "S" in the command mode (for Specterm 64, tape saves only). For saving online using other mass-storage devices (eg. microdrives, or disk drives), refer to the operating instructions of the particular terminal program you use.
Once you've saved the contents of the buffer to tape, disk or microdrive, remember to clear the buffer once again before returning back online. One final note regarding saving buffer information online; recall earlier that the host is waiting for some instruction from you during the entire time you've been saving to tape or disk. Some BBS systems have a time limit of waiting for a user response. This time limit will vary (anywhere from 2 - 5 minutes of inactivity) from system to system. If this time is exceeded, the BBS will sometimes automatically log the user off. You can see the reason for such a feature, someone could tie up a system indefinitely! So, just be concious of the amount of time you've taken if you practice this procedure.

> Quik Tip!
>
> A good source of practicing the above procedure is any local calling board in your area. Most boards regardless of what systems they support usually have text files available. Try practicing on these boards (you might even ask the Sysop for help if you're not quite sure on how its done). In this way, the cost of the phone call is minimal. Once you feel comfortable and confident, you can then try one of the long distance Timex boards and get some good information!

THE VALUE OF BUFFER SAVES

Capturing buffers and saving them to tape, disk or microdrive can serve several purposes:

1) Capture all the help menus from each BBS. As mentioned earlier, I keep a notebook with each BBS' help menus for easy reference.
2) Collect HELP files. Some boards have a separate and much more detailed help file which explains all of the functions supported on the system. Instructions for uploading and downloading can also be found in these files.
3) Save all the messages. Remember, messages which look Greek today, may turn to gold a month from now. Consider sharing information found in those messages (even if it doesn't concern you) with other members in your users group. That's the whole purpose of telecommunications; namely, the sharing of information amongst all!

EDITING BUFFER SAVES WITH A WORD PROCESSOR

Using one of the word processing programs (ie. Tasword 2 or MSCRIPT) for the TS 2068, it is relatively easy to edit a text file captured and saved from a BBS. This ability allows you to edit the text in any way (eg. delete information that is unwanted), and save the new version to tape or other mass – storage media for future reference. There are several ways this can be accomplished. One of the easier combinations is to use Specterm 64 software, which has the capability to load a buffer directly into Tasword 2 with no alteration. For Mterm II users, a program called LETTERWRITER/ BUFFERWRITER allows you to edit files which have been captured in your buffer. In addition, the program allows you to compose messages as well and load them into the buffer. This can then be used to transmit or upload text files once online. The editing capabilities of this program do not offer the features or sophistication of Tasword or MSCRIPT but should suffice for smaller files. Another major enhancement for Mterm II users is the Loader V series of programs offered by Kurt Casby. Loader V has the ability to load Tasword 2 or MSCRIPT files directly into the Mterm buffer for transmission. Using a program called "UNLOADER" (also provided with Loader V), you can take any Mterm buffer text file and convert it into Tasword 2 or MSCRIPT files for easy editing.

Can the above process be done without extra software? The answer is YES. The following information was written by Mark Fendrick and was "captured" from the Omni – Net BBS:

"...here is the procedure for sending MSCRIPT files using Mterm and the 2050 modem:

1) Save your MSCRIPT files to tape as normal. (You may find that for some systems you may have to enter a carraige return (CR) at regular intervals depending on the host system. By setting the line length (window) to one character less than you desired final form, you can go to the beginning of each line, press (ENTER) and easily add the required (CR's)).
2) Remove your MSCRIPT tape, and then on a blank tape, start recording, and type: SAVE "text"CODE 26710,20000 and then press (ENTER). You may remove this tape as soon as the header has been recorded. Remove this tape.
3) Put your MSCRIPT tape back into the recorder and type: LOAD "" (ENTER). When the header has passed (you will not see a program: or bytes: information) stop the tape immediately. Turn the right hub clockwise one half turn and then remove.
4) Play the dummy header tape and remove it as soon as the header is read. Then, put the MSCRIPT tape in and play it. This should now be read in, and will stop with an error message (that is OK – it does not mean that there is a problem).
5) Load Mterm, but do not type PRINT USR 54016.
6) POKE 23628,200
7) Now, Type: PRINT USR 54016. You should now have your file in the buffer.

Some additional notes on the above procedure:

- The address 26710 represents the starting address of the Mterm buffer.
- PRINT USR 54016 is the instruction given to run the Mterm machine code program.
- POKE 23628,200 is necessary, since the variable VARS normally points to the end address of the buffer area (ie. 26710).

DOWNLOADING SOFTWARE

For some reason, there seems to be quite a mystique surrounding the process of downloading programs from BBS'. Believe me, this has no basis in rational thought. Downloading is EASY! It's far more difficult to learn the commands for Tasword 2 or MSCRIPT than it will ever be to learn how to download a program. The best way to learn is to have somebody show you how to do it. There is no substitute for hands – on – experience, and incidentally, doesn't this sound like an excellent workshop for a users group meeting? In the descriptions below, I have tried to cover as many different combinations as possible.

One problem Timex computerists faced for some time was a lack of appropriate software to accomplish the task. I hope you can see from this guide, the tremendous progress that has been made in this area! Until the relatively recent arrival of Xmodem protocol for our computers, the only available methods were straight ASCII and HEX transfer, neither of which possessed any type of error checking. ASCII is suitable for text files, since a character lost or gained during the transmission is not going to ruin the information to a significant extent. However, there are two potential hazards in attempting to download programs through ASCII transfer:

1) The ASCII character codes used consist of 128 possibilities. About 100 of these are harmless in terms of they have no adverse effect on your computer as they stream into the buffer. However, the remaining 20 – 28 are "Control" type codes. That is, they do things like ring the keyboard bell, open and close the buffer automatically, etc. If any of the ASCII codes stream into your buffer that happen to be one of these control codes, it may very well corrupt the contents of your buffer and you'll probably encounter an INVALID COLOR or some other bizzare error message when you attempt to list the program. Fortunately, most of the BASIC programs uploaded to BBS' using Mterm II software arrived intact, since the majority of the programs were comprised of the "safe" 100 ASCII codes. On the other hand, machine code programs could very easily utilize any of the 128 codes, and consequently may not transfer properly using ASCII.

2) The second problem you may encounter is "line" noise. Line noise can happen at any time during the online transmission and ruin a program. You've undoubtedly have seen the effects of noise while just reading messages on ocassion as evident by the "garbage" characters sprayed onto your display. Imagine these characters mixing in with the transmission of a program – instant disaster! Have you ever seen the message on the bottom line (using Mterm) alternating between BUFFER OPEN:BUFFER CLOSED? This is caused by an unwanted control code (CTRL T) which is being sent by a noisy line. One way to avoid this problem is to convert the program into its HEX value equivalent of the ASCII codes at the transmitting end and then back to their ASCII codes in the receiving computer. This procedure minimizes the problem of control codes effecting your computer during transmission. However, this still does NOT provide any type of error checking.

Enter Xmodem transfer protocol. There are currently 6 different programs which support Xmodem transfer protocol for the T/S computers; 3 for the TS 2068 in the normal mode, 1 for the TS 2068 in CP/M, 1 for the TS 1000/1500, and 1 for QL. This represents a significant improvement for T/S modeming. It means that downloading/uploading can be fast and error free, and hopefully lead to the establishment of new T/S related boards across the country.

TRANSFER PROTOCOLS

A. ASCII TRANSFER

The name "ASCII" stands for the American Standard Code for Information Interchange, an international method of representing information in computers. Each character is represented by a numeric code (eg. the letters "A" thru "Z" correspond to the ASCII codes 32 – 90 respectively). The ASCII transfer protocol simply transmits each ASCII character code one by one. No error checking is involved. This method of transfer is more suitable for text or documentation files, since transmission errors which may occur would probably not disrupt the contents of the file to any significant extent. Since the method involves no error checking, it is somewhat faster than a procedure such as Xmodem (see below) which does employ error checking. Since some of the ASCII codes may be different than the codes used on T/S computers, all T/S terminal programs have a routine which translates from one type to another. The terminal software which possess ASCII transfer protocol capability are: Mterm II, Zterm 64, Modem753, and Qcode.

B. HEX TRANSFER

One problem associated with ASCII transfer is that some of the codes sent can be interpreted as actual commands and thus influence the actual operation of the computer. To overcome this, HEX transfer was implemented. HEX transfer protocol takes the ASCII characters (which are in decimal representation) and converts them to their HEX equivalent before transmission. In this way, neither computer will act on a command since the HEX numbers don't constitute commands. Though this protocol is an improvement over straight ASCII for the transfer of programs, there is still no error checking done. Software which has HEX transfer capability include: Mterm II, Zterm 64.

C. XMODEM TRANSFER

Xmodem is one of the most widely used transfer protocols in use today. Originated by Ward Christensen in the early 1970's, it provides a method of error checking during the transmission process thereby assuring an error free program upload/download. (Editor's note: Mr. Christensen can be reached on Compuserve, on the IBM NEW forum, which he visits frequently). The method of transfer involves sending a block of 128 characters, adding up their values (VAL) and then sending this "checksum" for the total block at the end. The receiving computer can then compare the checksum with the actual values it receives, and if they don't match, it scraps that block and requests for it to be sent again. It will attempt to try several times (the actual number of re – attempts will vary depending on the program used). Most programs have some finite number of re – tries after which the transfer will be aborted (eg. Loader V TSXmodem will attempt to re – send the block 10 times before terminating the process).

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Xmodem has two nice features, 1) it makes transfers about 99.9% error free, 2) it can be used for any type of computer. For example, if you are operating a BBS using the new Casboard 2068 which supports Xmodem transfer protocol, a person with an Apple or QL or any other computer with a terminal program supporting the same, could upload or download a file. There are some variations in different versions of Xmodem. The original version is known as the "checksum" method. All the T/S terminal software which currently supports Xmodem utilize this method. A newer version exist known as the "cylindrical redundancy checking" or "CRC" method. Some bulletin boards may attempt to initially upload or download a file using the CRC method first. If the first 5 attempts to send or receive should fail, it then may switch automatically to the original checksum procedure. Volumes of information have been written on the topic of Xmodem. You might try searching the database text files for more information if you want to learn more about this topic. It should also be mentioned that on some RCPM systems you may encounter a version of Xmodem called KMD (NUKMD). This version allows 128 and 1K blocks and bulk file transfers in both upload and download. The program can also detect which protocol you are using. An automatic feature of switching to transfer 128 byte blocks will occur if too many errors occur in the 1K packet mode. Regardless ot the version used on the BBS, the T/S programs which provide Xmodem transfer will work with either program.

FINDING THE FILES

Having discussed the various modes of transfer protocols available for the T/S computers, it is readily apparent that there can be several different formats a given file can exist in. In many cases, the different formats are incompatible with each different transfer protocol (ie. one cannot download using HEX transfer a file that was originally uploaded using Xmodem etc.). So, the next question is where can you find the different file types ? After studying the various BBS' that support T/S file transfer, we've summarized the different file transfer protocols in the table below. Many of the boards still support HEX transfer, however Xmodem protocol is becoming more of the standard for T/S file transfers.

	ASCII	HEX	MINI XMOD	Z COM	SPECTRATERM	CASBY XMODEM	SPECTERM 64	ZTERM 64	QCODE ASCII	QLTERM	RLE FILES
Bubbs BBS	Y	N	N	N	N	Y	N	N	N	N	Y
Bill's Obsession	Y	Y	N	N	N	Y	Y	Y	Y	N	Y
Compuserve	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
FWKUG BBS	Y	Y	N	N	N	Y	Y	Y	Y	N	N
King's Market	Y	Y	N	N	N	Y	N	N	N	N	N
LT BBS	Y	Y	N	N	N	Y	N	N	N	N	N
Night Owl Special	N	N	Y	N	N	Y	Y	Y	N	N	N
Owego Free Academy	Y	N	N	N	N	Y	N	Y	Y	N	N
Serial Port	Y	Y	N	N	N	N	N	N	N	N	N
Startext	N	Y	N	N	N	N	N	N	N	N	N
Timex Exchange	Y	Y	Y	N	N	Y	Y	Y	Y	N	Y
The TSU BBS	Y	N	N	N	N	Y	N	Y	Y	Y	Y
Tyler Timex BBS	Y	Y	N	N	N	Y	N	N	N	N	N

The only known source for both Z-Com and Spectraterm 1.3 files (both Byte-Back products) is the Compuserve T/S SIG. This is probably due to the lack of error checking routines and the fact that most users now have TS 2050 modems. Another hard to find format is the Mini-Xmod TS 1000/1500 downloads. They are available on three boards (Note: However, TS 1000/1500 files are available by request only on the Timex Exchange; leave a message for the Sysop if interested). QL programs in Xmodem format are still hard to come by, however I suspect this may increase in the future. Keep close watch in particular on Compuserve, the TSU BBS and Timex Exchange in this area.

HOW TO DOWNLOAD

In looking at the various download procedures on the BBS', there are basically 2 general types of setups: 1) Menu driven systems, 2) RCPM's or MBBS's which allow more user control over the process. The following examples are presented:

1. ASCII download w/Mterm II (Menu driven BBS format)
2. ASCII download w/Mterm II (RCPM)
3. HEX download w/Mterm II (RCPM)
4. Xmodem download w/Mterm & Loader V TSXmodem (RCPM)
5. Xmodem download w/Specterm 64 (RCPM)
6. Xmodem download w/Zterm 64 (menu driven)
7. Xmodem download with Modem7S3

Now get ready folks, you won't BELIEVE how easy it can be!

A. ASCII DOWNLOAD W/MTERM II (Menu driven BBS)

Step 1. Load Mterm II with LOAD ""CODE 54016

2. Following a successful load, type PRINT USR 54016 (ENTER)
3. Press (ENTER) to go to the Main Menu
4. Choose "D" for Data Buffer Menu
5. Make sure the buffer is empty, closed, and conversion set to NONE. If not change to these settings
6. Logon to the BBS (in this working example, we'll logon to the TSU BBS).
7. Once logged on, select "D" for Download from the Main Menu
8. You will be taken to the TSU Download area where you now select "A" for Download A Text File
9. All current text files will be listed, and a prompt will ask for the filename to download
10. For this example, let's key in the filename "TSFEST" (without the quotation marks). At this point the BBS will calculate the send time and displays something like this:

```
FILE SEND TIME:
Minutes: 1
Seconds: 5
Protocols:

0) ASCII
1) Xmodem (Amodem type)
2) Xmodem (Standard)
3) Abort
```

11. Choose "0" for ASCII after which the display shows the following message:

```
Ready to send
Control C to Abort
Press Any Key to continue
```

12. Now, open the Mterm buffer by pressing CAP SHIFT 8 to get back to main menu. Goto the data buffer menu once again and open the buffer. Once the buffer is open, hit (ENTER) twice to get back into the terminal mode. Then press any key to start the download process. There will be a slight pause, and then you should see the document in question begin to scroll up your screen. One word of caution – try to minimize the amount of time you take to exit the terminal mode and open your buffer. Most systems will only wait so long before automatically aborting the download request.
13. Once the entire file has been transmitted, the last line of text will stop scrolling. At this point, exit the terminal mode once again and close the buffer.
14. Choose the View buffer option from the data buffer menu to see if the file was received intact. Download is complete.

B. ASCII DOWNLOAD W/MTERM II (RCPM SYSTEM)

1. Follow steps 1 – 5 listed above.
2. In this example, we'll logon to the Timex Exchange BBS
3. After the logon preliminaries, choose "C" at the main menu to enter CP/M.
4. At the "A0>" prompt, type "D2:" to switch to drive # 2.
5. At the "D2>" prompt, type DIR (ENTER). A list of the text files residing on this drive will be displayed.
6. Now, type in the word "ASCII" (without the quotes) followed by (ENTER).
7. You will be asked if you want to Upload or Download. Type "D" for download followed by (ENTER).
8. When asked for the filename, type in the desired name (eg. SURVEY.TXT).

9. For the next two prompts which appear – "Expand CR to CRLF ?(Y/N)" and "Strip LF from CRLF?(Y/N)" answer "N" to both.
10. When asked for a "Timed or Prompted Start", type "p" for prompted.
11. It will then tell you to "press return" when ready to send. Similar to the previous example, we must first exit the terminal mode and open the buffer just like we did above.
12. Once the buffer is open, hit (ENTER) twice to return to the terminal mode and then one more time to initiate the download process. You should then see the information scroll up on the screen, line by line until the last line is reached.
13. At the completion of the file, you'll get the CP/M prompt "D2>" once again. At this point, exit the terminal mode and enter the data buffer menu to close the buffer.
14. Now choose View the file once again to verify the receipt of the selected file.
    Download procedure complete.

C. HEX DOWNLOAD WITH MTERM II

Although downloading using MTERM II HEX conversion protocol is not recommended due to the lack of error checking during the transmission process, the procedure is listed below for those of you who might not yet have an Xmodem program. (It is highly recommended that you consider purchasing a program that supports Xmodem protocol as many BBS' are eliminating HEX type conversion protocols)

1. Load Mterm the usual way (see steps 1 – 4 of the first example).
2. Enter the data buffer menu, ensure the buffer is empty (if not, clear it at this time), closed and the conversion set to HEX.
3. Logon to a BBS (in this working example, we'll once again use the Timex Exchange).
4. After logging on, once again choose "C" from the main menu to enter into CP/M.
5. This time at the "A0>" prompt, type "B2:" (ENTER). This is where TS 2068 files transferred using Mterm HEX procedures reside.
6. At the "B2>" prompt, type "DIR" to get a directory listing of the current files. Once you've identified a file you wish to download, type "QMTERM" (ENTER).
7. After a momentary pause, you will see a menu display. Choose "S" to send at which time the prompt will ask for the filename. Type in the name of the desired file (eg. SIMON.TS) followed by (ENTER).
8. In a very short time, you will see the message..."searching for file" then the QMTERM program will automatically open the Mterm buffer and begin the transmission process.
9. At this point, you will begin to see the HEX code numbers scroll up onto the screen. Finally, when the entire file has been transmitted, the "BUFFER CLOSED" message will appear on the bottom line, and the QMTERM menu will once again be displayed. (Note: If you have a problem, the QMTERM program does have a HELP screen).
10. Once the QMTERM menu reappears, you may choose to exit to BASIC at this time and save your program. (Note: QMTERM was written by Dave Clifford and is found only on the Timex Exchange BBS in drive B2).

D. XMODEM DOWNLOAD W/MTERM II AND LOADER V (RCPM SYSTEM)

1. Load Mterm II the normal way but DO NOT type PRINT USR 54016 yet.
2. Load Loader V using LOAD "", but DO NOT RUN yet.
3. Advance the Loader V cassette and load TSXmodem using LOAD "TSXmodem"CODE. Once this program has loaded, type RUN (press "R") followed by (ENTER).
4. Now you'll see the Loader V main menu. Select "1" to run Mterm.
5. Hit (ENTER) to get the Mterm Main Menu, then choose "D" for data buffer menu.
6. Since the BASIC program of Loader V is still in the buffer, clear it out at this time. Also, make sure the buffer is closed, and set the conversion to "NONE".
7. Logon to any RCPM system. (For this example, guess which one we'll logon to – The Timex Exchange!)
8. Choose "C" from the main menu to enter into CP/M. At the "A0>" prompt, this time we'll type "A2:" (ENTER). This is the drive number that contains T/S programs uploaded via Xmodem.
9. Type in "DIR" (ENTER) to view the directory of this drive. Identify a program you wish to download.
10. If you're not sure what the program does, use the TYPE command to view the accompanying "DOC" file (if there is one). You can then CTL – C to end the listing and return to the A2> prompt. Now, to download the file you want, type "KMD S filename" followed by (ENTER). (On the Timexchange, KMD is a version of Xmodem. Other RCPM systems may be using the original Xmodem program as well. Either will work just fine. Also, on the Timexchange, programs up – loaded with Xmodem have the extensions .TSX (for Loader V TSxmodem, or .SPX for Specterm 64 Xmodem transfer).

11. After a slight pause, you see:

    KMD v21(c)
    File open: MDCAT.TSX
    Send time: 2:35 at 300 Baud
    File open – ready to send
    Aborts with several CTL–X

12. At this point, exit the terminal mode and exit into BASIC.
13. Once in BASIC, type in "PRINT USR 24415" (ENTER). The screen will clear, and there will usually be a slight delay while the 2 computers attempt to synchronize the Xmodem transfer. When you begin to see "+" signs one–by–one across the screen, the Xmodem process has begun. Recall from the earlier discussion of Xmodem protocol, the "+'s" represent each successful 128 byte block of data sent.
14. Once the last block has been sent, you will automatically return to Mterm. At this time, simply press (ENTER) to get back into the terminal mode. At the "A2>" prompt, type "BYE" (ENTER) to log off.
15. Now, let's save our program to tape (or disk, or microdrive whichever you use). If the program that you downloaded was a machine code program, exit to BASIC and save it using the following commands:

    SAVE "FILENAME"CODE 26710,filelength (where file length = the number of bytes indicated in the Mterm buffer).

    If the file was a BASIC program, then simply type: SAVE "FILENAME". You may wish to also VERIFY at this time.

E. XMODEM DOWNLOAD USING SPECTERM 64 AND A TS 2050 MODEM (RCPM SYSTEM)

Specterm 64 is a very versatile terminal program and can be configured in a number of different ways with the addition of the G & C Z–SI/O RS 232C Card to any number of compatible 300/1200 baud modems. For this example, we have configured it to operate with the TS 2050 modem.

1. Load Specterm 64 using LOAD "".
2. Engage the "CAPS LOCK" function.
3. At the local control menu, choose "2" to run Specterm. At the title page, press any key to enter the terminal mode.
4. Follow the instructions for logging on to an RCPM system like the Timex Exchange as described in the previous examples. Once again, select the drive containing the Xmodem Timex files (eg. A2).
5. Obtain a directory listing of the files currently residing on the drive (ie. Type "DIR" (ENTER)) and select a file for download.
6. Type in the Xmodem command (remember on the Timex Exchange, the program name is KMD) as follows: KMD S filename (ENTER). Shortly, you should see the following information:

    KMD v21 (c)
    File open: MDCAT.TSX
    Send time: 3:35 at 300 Baud
    File open – ready to send
    Aborts with several CTL–X

7. At this point, key in CAP SHIFT 1 to get the Command Mode of Specterm, and press "R" to receive. There will be a slight pause, and the letter "R" should begin to blink in the upper right corner of the screen. At the completion of the download, the "R" will stop blinking and you will return automatically to the terminal mode (Note: Ensure the settings are 8/1/N).
8. Logoff the BBS at this time by typing "BYE" at the CP/M prompt.
9. Put a fresh tape in your cassette recorder and goto the command mode once again using CAPS SHIFT 1.
10. Start your recorder (in the record mode) and press "S" to save the program. (Note: a nice feature of Specterm 64 is the automatic inclusion of the filename for you).

F. XMODEM DOWNLOAD USING ZTERM 64 (MENU DRIVEN SYSTEM)

1. Insert OS–64 cartridge and power up TS 2068.
2. Load Zterm with LOAD "".
3. Choose the appropriate storage device and printer interface.
4. At the Main menu, choose "D" for Data Buffer Menu.
5. Ensure the buffer is empty and closed. Hit (ENTER) twice to get back into the terminal mode.
6. For a change of pace, we'll logon to a menu driven system like Bill's Obssession BBS.
7. After logging on the BBS, enter "F" from the main menu to access the Files Section.

8. From the file menu, enter "L;1" to switch to the Timex File Section (be sure to include the ";").
9. Find a file name to download (eg. 64COL.TSX). At the file menu prompt, type "D" (ENTER).
10. The prompt will then ask you for the file name to download. Type in (for this example) "64COL.TSX" (ENTER).
11. The next prompt will ask for a transfer protocol presenting different choices. Choose the number corresponding to XMODEM. After a slight pause, the transfer statistics will be presented (ie. number of blocks, send time etc.).
12. At this point, exit the terminal mode and go back into the Data Buffer menu. Choose "X" for Xmodem receive. After a momentary delay as the two computers attempt to synchronize, you should see your buffer open, and the words "Receiving Block 1" at the bottom of the screen. After another short pause, the BUFFER USED figure will increment from 0 to 128 (very quickly), after which it will update and say "Receiving Block 2" etc. This process will continue until the entire file has been transmitted. This feedback, in my opinion is the NICEST feedback I've seen from the various T/S Xmodem programs tested. Unfortunately, the program is not without bugs (see the product review section). At the completion of the file transfer, you will see the BUFFER CLOSED message appear and you'll be returned to the terminal mode.
13. Save and verify the program in the normal way.

G. XMODEM FILE TRANSFER W/MODEM7S3 (MENU DRIVEN SYSTEM)

1. Put the RP/M Boot Disk into Drive A of your AERCO system and power - up. Wait for the "A>" prompt.
2. Type in "Modem7S3" (ENTER) - make sure that program disk is in drive A.
3. When asked for the speed of the modem, word length, number of stop bits and parity, enter the appropriate values (eg. 300,8,1,N).
4. Put a fresh, formatted disk into drive B (if you have a two drive system).
5. We'll logon onto Bill's Obsession BBS once again for this example. After the logon preliminaries, type "F" for the files section.
6. Once at the files menu, type "L;2 for the AERCO RP/M files. Find an appropriate file to download (ie. XDRIVE.LBR). (Note: the extension .LBR indicates this a library type file which in fact contains more than one file bundled together. To extract the files contained within a library file requires a separate utility program to accomplish this and is beyond the scope of this guide. The user should refer to either HELP files on the BBS or books on CP/M for more detailed info - rmation).
7. Choose "D" from the files menu to download. For the protocol, choose the XMODEM option.
8. Enter the filename when prompted to (eg. XDRIVE.LBR (ENTER)).
9. The file transfer statistics will then be displayed and an indication that the file is ready to be sent.
10. Now, type in "E" to exit the terminal mode and go back to the main Modem7S3 menu.
11. At this point, type in "RT B:XDRIVE.LBR" (ENTER). The "T" after the "R" will automatically put you back into the terminal mode after the download process. The "B:" indicates to save the incoming program to the "B" drive.
12. After typing in the above, you should begin to see a series of numbers appear on your screen (in HEX) which represent each 128 byte block of characters being sent. As with all Xmodem programs, the host computer will "open" and "close" the buffer. After all the blocks have been sent, the host will "close" your buffer and you will automatically be returned to the Terminal mode.
13. Logoff at this time (type "G" (ENTER)).
14. Use CTL E to exit the terminal mode, then type "DSC" (ENTER) to disconnect from the TS 2050 modem.

Easy stuff isn't it ?

Hopefully, these short examples will give you some flavor of what's involved in downloading a program. The procedures are very simple in practice. Remember, most BBS' will have good HELP files which thoroughly explain to procedures used to download a file from their particular systems. When in doubt most Sysops will be glad to offer some assistance in this area.

UPLOADING FILES

Were it not for those who uploaded programs to the various BBS' that support T/S computers, there would BE nothing to downloadl It is part and parcel of downloading that they should also upload. The process is not very difficult, and if you have Xmodem and a 1200 baud modem or PC – Pursuit, it doesn't have to be expensive either. If you lack all the above, the last resort could be to send a tape containing the files you wish to contribute to the Sysop. This method costs very little, and my experience shows that (even though it is a greater hassle for them) they usually appreciate the new program.

The process of uploading works very much like downloading with the possible exceptions:

1) On an RCPM based system, instead of typing XMODEM (or KMD) S Filename, you would type XMODEM R Filename instead. (The "R" for receive a program from you to the BBS substitutes for "S").
2) On most systems, once you have uploaded a program, you will be asked to provide a short description of what the file is all about. Among the items which should be included in this description is the type of computer the program will run on, what type of program it is (ie. BASIC, MC, or DOCumentation), and finally a brief explanation of the what the program does. If the program really requires an explanation that won't fit in a couple of lines, then by all means, PLEASE INCLUDE a DOCumentation file to accompany it. The way the program should run may seem obvious to you, but put yourself in the place of another user who has never seen the program before. Browse thru some of the directories and you'll find many programs have a separate .DOC file that accompanies them. Believe me, the extra time it takes to write a short description of how the program works will benefit all who decide to download and use it.
3) Probably the biggest difference which exists is how to get the program into your buffer in order to be able to upload it. This process will vary depending on the terminal program that you use. For example, for Mterm II users, loading a BASIC program into the buffer is no problem at all. Simply exit into BASIC and load the program in the normal way. However, if the desired program is a machine code or text file (which exists as a "byte" file), then loading it into the buffer is a bit more tricky. The problem arises in that when you load the program, the information contained in the leading "header" tells the computer what memory address to load the program from. Unfortunately, in most cases, this address is not the same as the starting address of Mterm's buffer. One method of overcoming this problem is to use a program such as Loader V. This excellent utility program will allow you to load ANY machine code program, text file or screen string into Mterm's buffer easily. For those who use the terminal program Specterm 64, things are a bit easier. Specterm requires no extra utility to accomplish this task. In the Command mode, simply choose "L" and then start your tape. Specterm will take whatever is on the tape whether it be a machine code, Tasword 2 file, screen string etc., and place it in memory (including the header information as well!). With the new TS 2068 version of Specterm, TS 2068 programs can now be loaded as well (note: the original version of Specterm 64 operated only a Spectrum emulated TS 2068).

While time and space do not allow specific examples on how to upload files to each specific BBS you may try, fortunately those system HELP files can be accessed anytime while online. There, you will find specific instructions on how to upload to the BBS. One other note of importance, REMEMBER the programs you upload should be of the PUBLIC DOMAIN type. Uploading copyrighted or commercial programs is strictly prohibited and could get the Sysop of the BBS in deep trouble!

INTERPRETING FILENAMES

In general, file names actually consist of two components – the file name itself and a file extension. By convention, the file name is an abbreviation providing a faint clue of what the file is (eg. RLEPRO clues us that this file concerns the subject of RLE graphics or something similar). The extension (ie. the letters that appear to the right of the ".") are included to indicate the type of file the program represents (eg. ".TXT" indicates that the program is an ASCII text file of some sort). However, it is the extension that varies so much from board to board. Unfortunately, no standardization exists today for Timex files across the different BBS'. Although some Sysops have adopted conventions to be used for files uploaded to their specific boards, you will find others who use completely different standards.

So, not by choice mind you, I have included the different extensions you may encounter on some of the more prominent Timex boards you may call.

THE TIMEX EXCHANGE

.LST is an ASCII program listing. You can D/L it using ASCII transfer or view it thru "TYPE".
.TXT is an ASCII text file. Can be D/L using ASCII, HEX or XMODEM transfer.
.DOC is an ASCII documentation file which accompanies a program file.
.TS is a Basic program uploaded in Mterm II HEX.
.TS1 is a Basic program for the TS 1000/1500 uploaded using Mini-Xmod.
.TSX is a TS2068 program uploaded in Casby TSXmodem (Loader V). Can also be D/L using Specterm 64 or Zterm 64. With the former, a special utility to add a header to the file must be used (eg. SP64FEX.SPX).
.SPX is a Specterm 64 program. This file also includes the header (as opposed to a .TSX file which does not). You could D/L this type of file with Casby TSXmodem and delete the first 32 bytes. However, no guarantees this will always work.
.RLE is an RLE graphics file. Any terminal program with Xmodem capability can be used to D/L this file (including QLTERM).
.SC$ is simply a screen string file.

BILL'S OBSESSION BBS

.HEX is a TS2068 file uploaded in HEX using Mterm II.
.TXT is an ASCII text file.
.TSX is a TS2068 file uploaded using Casby TSXmodem (Loader V). Can also D/L using Zterm 64 (see above).
.SPX is a Spectrum or TS 2068 file uploaded using Specterm 64 Xmodem.
.DOC is an ASCII documentation file which accompanies a program.

r.W.K.U.G. BBS

.TS is a TS2068 program uploaded using Loader V Casby TSXmodem.
.TXT is an ASCII text or documentation file.
.SPX is a Specterm 64 program uploaded using Specterm 64 Xmodem.

NIGHT OWL SPECIAL BBS

.TS1000 is a TS1000 program uploaded using Mini-Xmod Xmodem protocol.
.TSX is a TS2068 program uploaded using Casby Loader V TSXmodem.
.DOC is an ASCII documentation file uploaded with Loader V (cannot D/L using ASCII)
.S is a serial file (text only) uploaded using Loader V.
.P is a TS2068 program uploaded using Loader V.

OWEGO FREE ACADEMY

.BTS is an ASCII file, program or a text file.
.LST is a program listing in ASCII format.
.BAS is a TS2068 program uploaded using Loader V.
.DOC is a standard documentation file in ASCII format

LT-BBS

.HEX is a TS2068 program uploaded using Mterm II HEX
.TSX is a TS2068 program uploaded using Casby TSXmodem
.XM is a TS2068 program uploaded using Xmodem
.BAS is TS2068 Basic program uploaded using Mterm II HEX
.DOC is a documenation file in ASCII format
.TXT is a text file in ASCII format

BELDEN HILL BBS

.BAS is a BASIC program for the TS2068 uploaded using Xmodem
.TXT is a text file in ASCII format
.BYT is a binary file uploaded using Xmodem
.DOC is a documentation file in ASCII format

COMPUSERVE, originally had no standard file extension conventions either. You will still find some of the older uploaded files have no extension at all! Recently, however a standardization has been followed by the those who upload files to the Timex Download Library. For example, files uploaded using Xmodem protocol (via Casby TSXmodem or Specterm 64 or Zterm) have an extension of .XMD. Files uploaded using Mterm HEX have the extension .HEX adjacent to the file name. The text and documentation files will have .TXT or .DOC next to the file names. When in doubt about what a particular file is all about, use the BROWSE command at the I prompt (eg: BRO filename.ext). This may also provide some clue on how the file was originally uploaded.

Finally, some boards as mentioned earlier provide uploading and downloading through menu driven BBS systems. In most cases, extensions to file names are not even provided. Fortunately, a short file description usually accompanies each file name. By reading the description, an indication is sometimes given as to what transfer protocol should be used to download the file. Boards which you will find these types of files include The TSU and SERIAL PORT BBS's.

RLE GRAPHICS

For those of you unfamiliar with RLE graphics, the term "RLE" (run – length – encoding) is a process of converting a 256 X 192 pixel screen image into a string of ASCII characters. Each RLE file follows a standardized format (ie. standard header and footer with continuous pairs of ASCII characters in between). Because a standardized format is used, graphical pictures generated on basically any computer which supports high resolution graphics can be viewed on different systems. This is also true for the TS 2068! Imagine, being able to view a high resolution drawing created on an Amiga, Apple, Atari or IBM on your very own TS 2068. Well, it's certainly achievable, thanks to the efforts of John Ryan.

It was on Compuserve that I first encountered the term "RLE GRAPHICS." John Ryan, a frequent visitor to the Timex SIG on Compuserve first announced that there was a Picture Support forum available on Compuserve which contained high resolution "RLE" type pictures. Furthermore, John had written a BASIC program which could be used to decode a downloaded picture file for viewing on a TS 2068. The original program entitled "RLEPRO.TS (HEX Transfer) and RLEPRO.STX (Xmodem Transfer) are still available in the Timex Data Library (note: In addition, John also wrote a program to convert a graphic picture created on a TS 2068 into RLE format; this file can also be found in the Timex Data Library on Compuserve – RLEUPL.XM8, RLEUPL.TXT).

Well, having read this message, it immediately captured my curiosity and I soon found my way to the Picture Support Forum and downloaded an RLE file. Next, I downloaded John's decoder program. John recommend to compile the BASIC program before attempting to decode a picture file as the time to decode a complete picture could be quite lengthy. Not having a compiler at the time, I took the chance to run it from BASIC. Well, John was right! For 20 minutes I watched what at first appeared to be line after line of black and white pixels. Suddenly, as the last few lines were drawn, it was CHRISTY BRINKLEY full screen right before my eyes (oh, and what eyes)! My first reaction was nothing short of FANTASTIC!!

Since that time, significant improvements to John's original decoding program (through the efforts of several different individuals) have appeared. The enhanced versions include machine code adaptations (converts a picture file in less than 30 seconds!), print screen options and save to tape features. Also, several sources of RLE picture have been identified. Although, the majority of these are available only on Compuserve, I have noticed several RLE files being uploaded to other BBS's as well. QL users haven't been left out either. Thanks to Norm Lehfeldt a QL RLE decoding program exists (see Appendix for the QL program listing and Norm's comments on RLE graphics).

PROGRAM NAME	AUTHOR	SOURCE
RLEPRO.TS and RLEPRO.STX RLEUPL.TXT and RLEUP.XM8	John Ryan	COMPUSERVE, TImex Exchange BBS, FWKUG BB
RLEMASTR Series (includes TS2068, Spectrum Versions)	Mike DiRienzo	Timex Exchange BBS
QRL (For TS2068 & Spectrum)	Jack Dohany	Mail Order (see Appendix for Address)
RLE BASIC and COMPILED	Stan Lemke	TIME DESIGNS ARTICLE (Jan/Feb 87)

Sources of RLE picture files include (all found on COMPUSERVE): Picture Support Forum (GO PICS), FBI 10 most wanted list (GO FBI), Citizens Band Interest Group (GO CBIG), Art Gallery, Hollywood Hotline (GO HHL), the Broadcast Professional Forum (GO BPFORUM), Sailing Forum (GO SAILING). BBS' also having RLE files include: Timex Exchange, FWKUG BBS, Bill's Obsession BBS.

7
Product Reviews

THE MODEMS

For a time, those of us who owned a TS 2068 or TS 1000/1500 HAD no means of telecommunicating with the rest of the world. Finally, Byte-Back introduced a modem for the T/S line of computers. Shortly after that, Westridge decided to go ahead with the introduction of the 2050 modem. However, recent developments in the area of Timex Telecommunications have made it possible for us to use any standard 300/1200 baud RS232C modem. The following products are reviewed below:

ZX-81/TS 1000/TS 1500 MODEMS

1. Westridge 2050
2. Byte-Back MD-2

TS 2068

1. Westridge 2050
2. Byte Back MD68
3. Avatex 1200 using the Z-SI/O Board

ZX-81/TS 1000/TS 1500 MODEMS

A. Westridge 2050

Features direct connect (through the 56 pin expansion buss) to the computer. External power supply required. One front panel LED is used to indicate a "Connection" has been made. Comes with Aterm I terminal software (see Software Review section). Using a supplemental program (Mini-Xmod), the modem can be used to upload/download programs using Xmodem protocol. Articles have appeared which allow the 2050 circuit board to be modified into a standard RS232 board (refer to the Appendix). Since it has been out of production for some time, Westridge provides no after sales support.

B. Byte Back MD-2

Features direct connection to the computer. Power is drawn from the computer. No LED display to indicate current mode. Comes with Z-Com terminal software. Terminal software lacks autodial and auto answer capability. Uploading and downloading provided, however the protocol used is non-standard and specific to the modem. A version of Mini-Xmod is available for this modem which allows Xmodem file transfer capability. After sales support IS provided by the manufacturer. The modem also features a socket to which an RS232 connector could be attached. This can enable a serial printer, plotter etc. to be connected. The modem is limited to 300 baud transmission and is configured to mimic a Bell 103 standard FSK set-up. The RS232 connector does have the capability of up to 9600 BPS (Note: A hardware modification is required to do this however). It should also be noted that the terminal software CANNOT be loaded without the modem in place. The correct steps once the modem is attached is - 1)Turn on the computer, 2) Turn on the modem, and 3) Load the terminal software.

TS 2068 MODEMS

A. Westridge 2050

The same modem which can be used on the TS 1000/TS 1500 also can be used on the TS 2068. Basically, the same hardware features described above apply here as well. An enhanced version of the terminal software (Mterm II) can be purchased to take advantages of the TS 2068 color, sound, and extra memory. Other terminal software packages have also been developed to work with the 2050 modem (eg. Zterm 64 & Specterm 64). A valuable supplement to the Mterm II software is Kurt Casby's Loader V program (see software review section for details).

B. Byte Back MD-68

The MD-68 is the TS 2068 version modem. This modem features direct connection to the computer and requires a separate power supply. Spectraterm 1.3 terminal software comes with the modem. In conjunction with the terminal program, the modem also features auto answer but still lacks autodialing capability. No front panel LED to indicate current connection status. A 9 page manual accompanies each modem and contains schematics and parts list. As mentioned above, product support is provided by the manufacturer. The modem also has the RS232 connector (similar to the MD-2 model). The buffer area has 32K+ available storage.

C. Avatex 1200 Modem used with the G & C Z-SI/O Card

The Avatex 1200 is a standard RS232 connect modem. The features include autodial, auto answer, separate power supply and several front panel LED display lights which indicate connect mode, power status, transmission status, receiving status etc. The modem features both 300 and 1200 baud selection (there is a push-button switch located on the front panel to toggle between the two modes). A convenient ON/OFF switch is also located adjacent to the speed selector switch. Each modem comes with a full 2 year warranty from the manufacturer. The modem is actually available in two different models -- a "mostly" Hayes compatible and a 100% Hayes compatible version (1200HC) In order to use this (or any standard RS232 modem) with the TS 2068 requires an additional RS232 interface card. The two known to us are the G & C Z-SI/O card or the AERCO RS232 card. The Byte Back RS232 interface will not work, A fully documented users manual comes with each modem. With the 1200HC model, a free introductory pass to Compuserve is also included. Price differences between non-Hayes and 100% Hayes compatible models is 30-45 dollars.

TERMINAL SOFTWARE

One advantage other computer owners had over the T/S community was availability of different communication software for their systems. However, the time has arrived for the T/S followers. A host of different terminal programs have appeared on the market each offering some outstanding features. Reviewed below are no less than eleven terminal programs designed to work specifically with the TS 1000/1500, 2068 or QL computers (imagine all this occurred after the great "pullout" by Timex)!

TS 1000/1500 TERMINAL SOFTWARE

A. Z-COM

Two version of Z-Com exist , one for the unexpanded 2K TS 1000 and one for a 16/64K TS 1000 with additional RAM pack. The latter has the capability of saving up to 60 screens of text with the attachment of a 64 Ram pack. Although the program does allow for uploading and downloading of files, the format is non-standard and program specific. Z-Com files are available on Compuserve (are only knowledge of Z-Com transfered files). Also possesses limited continuous printout function (supports both the TS 2040 or Standard 80 column printer). Comes with a 12-page manual and product support is still provided by Byte Back.

B. ATERM I

This program accompanies the purchase of the original Westridge TS 2050 modem. Both a TS 1000 and TS 2068 version is supplied on the same tape. The program provides the basic function of a terminal program. No file transfer protocol is included. Parameters which can be altered include, data bits, stop bits, parity etc. Only 300 baud capability, but does have autodial (no dialing directory though), auto answer and a print screen option to a TS 2040 printer. A printer patch has been written to enable a full size printer to be used as well.

C. MINI-XMOD

This terminal program for the TS 1000/1500/ZX81 is available for both the Westridge 2050 and Byte Back modems. Two versions come on each tape, one for a 16K and another for the 64K Ram Pack additions. As a straight terminal program, it is very user "unfriendly" and difficult to operate. The major feature provided is an Xmodem transfer protocol which works well and easy. For this reason, anyone with the above computers wishing to download or upload files should have this program.

TS 2068 TERMINAL SOFTWARE

A. MTERM II

Mterm II adds many enhancements to the Aterm I terminal program. Included are such features as autodial (with a 14 directory phone list), auto answer, capability of defining up to 10 macro keys (each can be up to 53 characters), and includes a buffer of approximately 27+K. Capable of downloading/uploading using non-error checking ASCII, HEX or REM conversions. Online continous printing to a TS 2040 provided, however printer patches to Tasman or AERCO interfaces are available which enable printouts to full size printers. Long considered to be the one and only terminal software to use, it has served as a model for comparison to the newer programs on the market. Those who have tried to modify it (Mterm is entirely in machine code) say that it is very difficult to follow. Although it comes with a users manual, documentation on many of the features is lacking. Another supplementary manual written by Barry Carter is available which fills this void (See vendors appendix).

SOME ADDITIONAL NOTES ON MTERM II

The widespread popularity of this software has led us to include some additional information. No program in T/S computing has gotten as much attention and/or modification as this one. MTERM II is the second generation of MTERM I. Unfortunately, on the printed matter, Westridge made no differentiation. If the original Westridge tape you have as different programs on each side you have MTERM I, if not, you have MTERM II.

The program itself is fairly straight forward and easy to use. This is a lucky break, since the manual leaves much to be desired. As mentioned elsewhere the best reference on MTERM is Barry Carter's guide (See Appendix), also of help are the docs from Loader V which give a memory map of MTERM. Additional articles have appeared im magasines & User Group Newsletters (see Appendix).

By the way, neither Westridge Communications nor Micro Systems support this software at this point. Zebra Systems own the rights to it.

MTERM II is entirely in Machine Code, and starts at address 54016. The program itself is 7721 bytes long, so to make a backup of MTERM II alone:

SAVE "MTERM" CODE 54016,7721 <enter>

However, if you'd like to save the dialing directory and MACRO keys as you have modified them, then:

SAVE "MTERM" CODE 54016,9216 <enter>

Or, you could save the dialing directories as seperate files, such as:

SAVE "LOCAL1DD" CODE 61737,1495 <enter>

Thereby you could have any number of dialing directories saved to tape or disk. From Dave Rothman comes this:If you Escape to Basic and return to Mterm using PRINT USR 54016, you will lose the Macros and dialing directory. To avoid this, use PRINT USR 54079 instead.

The buffer for this program sits lower in memory, occupying the normal BASIC area, starting at 26710. Technically, it's 27,256 bytes long, but if you fill it completely, you may be sorry. Sine the buffer does start at the normal BASIC location, LOADing and SAVEing of BASIC programs can be accomplished in exactly the same way as any other LOAD or SAVE. But Machine Code, or "BYTES" files, are a different story. See descriptions of Utilities below for the solutions to this dilemma.

There are an AMAZING number of utility programs written to augment the capabilities of MTERM II over the years. Here is a partial list:

1) MTERM/AERCO patch- (also called MT-AERCO) this allows you to PRINT to an 80 col printer using the AERCO Centronic Printer Interface. It's written by Dave Schoenwetter, and is in the Public Domain.
2) LOADER V- allows you to load any "BYTES" file into the MTERM buffer, be it program, SCREEN$ or text, includes Autodialer. By Kurt Casby, a Commercial program
3) TSXMODEM- gives you Xmodem protocol for Uploading/Downloading of software. By Kurt Casby, Commercial Program.
4) TASTERM- Modifies Tasword 2 to allow you to load a text file captured in Mterm II's buffer for viewing/editing. By David Pranitis , Public Domain

5) LETTERITER/BUFFERITER- allows you to "write" a letter or post and load it into MTERM's buffer or modify an existing buffer save. By Rick Conard, Public Dom.
6) SEND-VARS- allows you to send a BASIC program with variables or M.Code. Originally intended to work with HEX protocol, but works also with Xmodem. By David Hoshor, Public Domain.
7) UNLOADER- allows you to take an MTERM buffer or MSCRIPT file and break it up into useable Tasword2 files. By Kurt Casby, Public Domain.
8) WIESER BUFFER UTILITY-includes the Mterm/AERCO printer patch (#1 above) and adds the FASTDIAL utility (Below) also allows "typing into" the buffer. See more details below. By Rebecca Weiser, Public Domain.
9) CODE X-allows sending of Machine Code programs, by Jim Showalter, Public Domain.
10) SCREEN X-allows sending of SCREEN$'s, by Jim Showalter,Public Domain.
11) RELOADER- Requires code of LOADER V, allows you to "Reload" buffer with any Machine Code file while still online. By Kurt Casby, Commercial
12) BASIC2text-Converts any 2068 BASIC program to an ASCII file so that you can Upload it for users of other computer types. By Michael Carver, Published in NOV/DEC "TIME DESIGNS MAGAZINE".
13) FASTDIAL- an Autodialer which first appeared on Micro-Systems BBS in FL Author Unknown, Public Domain.
14) HAMMERDIAL- autodialer by Randy & Lucy Gordon, Public Domain.

The MTERM/AERCO patch was written by Dave Schoenwetter and was originally published in the SINCUS NEWS. However several versions now exist. It is loaded as a "BYTES" file and is always in the computer when MTERM is there. It allows you to print continuously while MTERM is running, to any 80 Col printer that normally works with the AERCO Centronics Printer Interface (or the John Oliger version of the same interface) Many people have asked Dave to make revisions for THEIR particular hardware setup. Dave no longer owns a 2068, since he "fried" his last one, and now works exclusively with the 1000. Those of us who've used his programs are very thankful for his contribution.

LOADER V is the last generation of a series of programs which allows you to load ANY file, Binary, text, BASIC variable, or SCREEN$ into MTERM's buffer. This is, by far, the easiest and most powerful "Loader"-type utility for MTERM. Although it comes with several other programs, Loader V itself has both a BASIC and Machine code component. Once you've loaded the buffer with a file, you've lost the BASIC component. If you've finished Uploading and Logged Off, then simply re-load the BASIC part of Loader V. If you're still Online and wish to make successive Uploads, then use RELOADER since it won't disconnect you.

This program also includes an auto-dialer with dialing directory that allows the storage of 21 numbers, along with MTERM's 14, you could then have a total of 35 numbers in memory. Of all the auto-dialers so far available, this is by far the best. It is very fast , at least 2 or 3 times faster than FASTDIAL and accurate. Kurt also gives good documentation on how to modify the dialer. In Fact, all the LOADER V docs are excellent.

TSXmodem. They use the word "elegant" in Mathematics to describe an equation which has been reduced to absolute simplicity, yet complete. It is a thing HARD to achieve. TSXmodem is an "elegant" equation. Only 537 bytes long, probably the most remarkable 537 bytes written for the 2068 in a LONG time. Essentailly, it allows uploads and downloads in xmodem protocol. This is a "Relaxed" xmodem which works fine on PCPursuit. It gives good feedback on the download in progress. It comes as part of the Loader V package.

TASTERM. This is a modification to Tasword2 which allows you to import and export MTERM2 buffers. You need to own Tasword2 first, then alter it as per instructions (see appendix).

LETTERITER/BUFFERITER is a commercial program which has been reviewed at least twice in the T/S press. It isn't quite a Word Processor, more like an "editor". It's beauty lies in the fact that it's output is fully compatible with MTERM's buffer. Likewise, any MTERM buffer could be put into it for modification.

SEND-VARS-An early attempt to send BASIC variables and Machine code via MTERM. It works in Timex mode, not Spectrum mode. It takes the machine code and creates a dimensioned string variable. David Hoshor (the author) describes this program, and so sheds light on MTERM itself:

"The MTERM program determines the buffer space used by subtracting the value contained in the system variable PROG from the system variable VARS. VARS contains the address at which the BASIC variables begin; PROM contains the address at which BASIC begins. If you want to send variables or machine code, you have to find a way to trick the 2068 into thinking that the variables are part of the BASIC section of the program. I did this by writing a program that raises the value of VARS up to that of E_LINE and saving the former value of VARS so that it can be restored by the receiving party when the program is received. E_LINE is the last byte of the BASIC program and variables area."

"The program SEND-VARS will send machine code by putting the machine code into a dimensioned string variable. This, of course, is a variable and can therefore be sent by SEND-VARS." David Hoshor.

UNLOADER allows you to load in an MTERM buffer, and save it to tape (or disk if you modify the BASIC) in a Tasword2 format, which you could then edit and/or print to an 80 Col. printer. Very handy and in the public domain.

WEISER BUFFER UTILITY This program is based in large part on previous work, yet still breaks new ground. It uses both the Schoenwetter printer patch and the FASTDIAL program from Micro-Systems BBS, as well as several added functions. A) You can "type" right into the buffer, B) you can set the autodialer to dial more than one number repeatedly (as many as you like), and C) it repositions the PROG variable so that this program is constant in memory (i.e. dosen't get erased when you "Clear" the buffer. So you have a permanent BASIC program. See the print-out in Appendix for instructions on inputting and running this program.

CODE-X. Recently released by Jim Schwalter, this is a public domain program for putting a M.Code program into MTERM's buffer. (we were not able to test it), comes with documentation, available on TSU BBS.

SCREEN-X also a recent release, this is a P.D. program for putting a 2068 SCREEN$ into your buffer. Also comes with documentation, available on TSU BBS.

RELOADER allows you to reload as many M.Code programs as you like in succession (for the purpose of Uploading).It differs from the Loader V itself in that it has no autodialer and the Loader V will hang up the modem if you load it while online. You must have used the Loader V program initially as this one depends of the Loader V M.Code.

BASIC2text this has been a long needed program. It allows you, the dedicated T/S BASIC programmer, to share your hard efforts with users of other computers. This program will AUTOMATICALLY convert a standard 2068 BASIC program to an ASCII file that you can Upload. Once this ASCII file is Uploaded, the receiver will probably have to do some conversion to make it run on their computer, but at least they'll be ABLE to, whereas before this came along, it would have been downright impossible. Published in Nov/Dec 86 TIME DESIGNS , written by Michael Carver, and available from the author for $4.

B. SPECTRATERM 1.3 (BYTE BACK MD-68)

Specific for the Byte Back MD-68 modem, this terminal program features 300 baud rate, a 32K+ buffer (allows storage of data in REM statements only), auto answer. The program lacks autodialing capability, and uploading/downloading of files is also limited to "REM" statements. It is possible to toggle the buffer, alter the communication settings, and save/load to the buffer while online. The program supports printouts to a TS 2040 printer or through an 80 column full size printer. The software cannot be loaded without the modem in place, but buffer saves CAN be read without the terminal program as these exist as regular "REM" statements. You must take care in not opening the buffer before a connection is established, or leave the buffer open after disconnection for fear of possible corruption of the data. Includes a fairly complete 6 page manual. Product support is provided by the manufacturer.

C. ZTERM64 (FOR THE WESTRIDGE 2050) also requires OS-64 Cartridge

ZTERM64 is a terminal program produced by Zebra Systems for the Westridge 2050 modem. Zebra had the advantage of having Mterm II as a basis to start with. The program also includes several enhancements. A full 64 column screen is implemented, however as mentioned in the title the Zebra OS-64 cartridge board is a requirement. Other features include Xmodem transfer protocol, a built-in 80 column printer driver (supports AERCO, TASMAN and A & J printer interfaces), and built-in configuration for the Zebra FDD disk drives and A & J Microdrives. One of the best features is a continuous ONLINE READOUT of all communication parameters including the buffer (this is the author's favorite !). The software is more user-friendly than Mterm II (eg. no abbreviations are used in the menus, rather items are spelled out). Commands used are very similar to Mterm II, so if you're familiar with that program, learning to use Zterm is relatively easy. Comes with a fully documented 24 page manual.

With all these outstanding features, Zterm is not without its share of problems. Dave Rothman (Co-Sysop on the Timex SIG, Compuserve) has documented the problems he has encountered with the program. "The upload and download portions are the weakest parts of the program. The direct Xmodem to disk functions, but leaves the file in a format that will not reload into the TS 2068. As it is, this function is only useful for text files! The normal Xmodem into RAM does not set the end of the program pointer correctly. It leaves the SYSTEM variable VARS pointing to the end of the last 128 byte block. Not the END of the PROGRAM!!! The normal non-protocal uploads in conversions to HEX don't work at all." (Editor's note: to date, there has not been any corrections made to the Zterm64 software by Zebra Systems).

D. SPECTERM 64

This terminal program first appeared in the U.K. where it was widely used on the Spectrum. G & C computer products obtained the U.S rights to market it domestically. The original version could only be used with a Spectrum "emulated" TS 2068 (eg. via Romswitch, Omni-Emu etc.), however just recently, a true TS 2068 version is now available. One of the major features Specterm offers is Xmodem transfer protocol and 300/1200 baud communication. (note: the 1200 baud capability is made possible with the additional Z-SI/O RS 232 card also marketed by the above - see hardware reviews for a description). The open end architecture design of the program makes it very versatile to customize to suit your specific requirements. For example, it can be modified to work with any variety of different modems through the use of "Overlays." An overlay is provided to work with the Westridge 2050 modem. The program produces 64 columns screen display WITHOUT the need for additional hardware! The Spectrum version features a 31K+ buffer (the TS 2068 version slightly less). The buffer can be toggled on/off while in the terminal mode, however to view it requires you to exit into BASIC. There are no MACROS, but the program does allow for sending all control codes while in the terminal mode. Includes a 10 page manual. G & C offer full product support (in fact, online support is available on the Timex Exchange BBS).

D. SPECTERM-64 V 4.0 & 4.1 (Revised Review)

This program first appeared as a commercial program in England where it is widely used on the Spectrum. Grey & Clifford Computer Products obtained the rights to sell it in the U.S. as modified for the 2068. Version 4.0 ran only in Spectrum mode. There are both Spectrum & 2068 versions of version 4.1. (NOTE: I originally reviewed this software in Ver. 1.0 of "The T/S Guide to Telecommunications". Much of that review proved erroneous. Please read the following carefully.)

The Big news here is Telecommunications at 1200 B.P.S. on the 2068. This is the ONLY way to achieve that speed on this computer. How can I describe 1200 BPS? Well, let me put it this way: If you bought a magazine and could only look at 10 square inches at a time and had to read the ENTIRE MAGAZINE in sequence- that's 300 BPS. But 1200 is like skipping through till you find the part you want, and THEN stopping to read. It's much more satisfying and efficient. It also puts Long Distance telecommunications in a "whole other dimension". As I mentioned elsewhere, an xmodem transfer at 1200 BPS takes ONE EIGHTH the time of a HEX transfer at 300 BPS; with the additional benefit that it's error-free. Once you begin serious downloading, you will truely appreciate this! The second big feature of this software is its versatility which is manifest in a block of 7K designated as a permanent BASIC component. That is, permanent all the time you're online, it dosen't get erased like the buffer in MTERM. However you can easily change it by loading a different version. What good is that block of memory? Well one MAJOR use is to interface the program to YOUR mass storage, WHATEVER that may be:Microdrive, Disk Drive or Ramdisk (coming soon). The next major use is to interface a WIDE range of modems which is particularly easy with the use of the Z-SI/O Card, but also possible through other RS-232 interfaces.

What else? Well there have been a wide variety of utilities written for MTERM, over the years, all squeezed into small blocks of memory left over by accident. The 7K Block of the Specterm software is a LARGE BLOCK by comparison. In it you could easily put printer drivers or auto-save routines or a number of other utilities all at the same time! Those routines used to I/F the mass storage and modems are called OVERLAYS, and were developed long ago by CP/M programmers to allow easy modification of a program without divulging the SOURCE CODE. When you buy Specterm-64, what you're buying is the CODE. But packaged with it, as a convenience are some examples of these OVERLAYS. In my first review, I said, quite negatively, that you need to enter a long BASIC statement in order to check the buffer. That was ABSOLUTELY FALSE! You can simply incorporate this statement into the BASIC component, and thus easily check the buffer, simply by escaping to BASIC. In fact, this routine is provided in the stock tape as it comes from Grey & Clifford. I had simply failed to load that particular Overlay. This terminal generates 64 WITHOUT the use of the OS-64 cartridge. This in itself turns out to be a big feature. Nearly all BBS' are configured for 80 columns, and while it isn't perfect, 64 Col is MUCH closer. A monitor is pretty essential, one I bought for $30 worked great. The character set has been designed to add readability (better than Tasword, I think). Once you get used to 64 Col.,it's difficult to go back to 32 col. for terminal work. The 64 col DRAMATICALLY increases the amount of information on the screen at any one time. All too often, at 32 Col., by the time you get to the bottom of a menu, the top has scrolled off the screen. Then you have to work from memory. This NEVER happens with 64 Col. In addition, the ARRANGEMENT of the on the screen makes it easier to follow.

In my original review, I described the lack of 80 col. printing facility. Besides the potential to add one thru the 7K BASIC area, buffer saves are COMPLETELY Tasword compatible. Although they may be too long, it's easy to break them up with UNLOADER, then simply load the file into Tasword and print from there. Also, in my original review I stated that, upon downloading, it was impossible to tell if the transfer was successful or not. THAT WAS ALSO INCORRECT. The blinking "R" on the screen tells you it's a successful transfer. Another mistake I made in my first review was when I said, "If you forget the Caps-lock and enter a lower case letter in command mode.... you must then reboot the program." Not true at all! If you make the above error, it will simply refuse the command until you use a capitol letter. It will lock up and need rebooting if you go offline (using the 2050 modem) and fail to immediately escape to BASIC. However, once you understand this, there's no problem.

Since my original review, I've put this program through a great deal of testing-spending hours and hours online & making over 100 downloads and uploads of all descriptions. I moved AMIGA files, MAC files,IBM files, text files & Etc. It worked beautifully. There WERE failures but none I couldn't eventually trace to operator error or host error. The trick to moving files of foreign computers is this: don't SAVE/LOAD it. Call board A D/L a file, disconnect, call board B and U/L. As I said, I did this MANY times with great success. One feature I grew to like more and more was the speed of the keyboard. The Keyboard scan routine on MTERM is a very slow one. Put mildly, it's a PAIN. I can, and frequently do, out-type it. But the joy of the Specterm is that I can type MUCH much faster. This is great on L.D. calls! Specterm also gives you "audio feedback" for each keypress. I really missed it when I went back to other terms. My experience showed that Ver. 4.0 was a bit TOO fast, but both versions of 4.1 are adjustable, so you can select the speed you want. The new version also allows for color control of the screen. One of the best things about this program is the certainty of future support. You will be hard pressed to find any two people who are more knowledgeable or have done more for T/S Telecommunications than Ed Grey and Dave Clifford. Their support is available both by voice and by data, the latter in the form of the TIME<X>CHANGE BBS. They and fellow users are currenly working on utilities & overlays to enhance the program which are available for download on the BBS free. So the big reasons for going to Specterm 64 are these: 1)1200 BPS communications, the ONLY way to do this w/2068, 2)Tremendous versatility in the form of a wide-open 7K BASIC Component thus enabling direct access to YOUR mass storage device and/or a wide variety of modems, 3)VERY active continued support for the system with new utilities & additions all the time-available on the TIME<X>CHANGE BBS, 4)The size of the buffer:31K+, 5)Better display & no need for the OS-64 cartridge, 6)Faster keyboard (The newest version lets you adjust), 7)Allows you to use nearly ANY RS-232 modem (the industry standard) when used with the Z-SI/O Card.

I HATE to see a good program maligned by poor reviewing and hope you will understand my error in rushing V 1.0 of The Guide to print. The main differences between version 4.0 and the two versions 4.1 (both Spectrum & TS 2068) are these. A)There is no 2068 version 4.0,only Spectrum, B) You can adjust the speed of the keyboard on 4.1 not on 4.0., C)The new version has a "relaxed" xmodem which works perfectly on PC Pursuit. D) You can change the screen color on Ver.4.1, you couldn't on 4.0. If you own 4.0 and want to upgrade to the SPECTRUM version of 4.1, it will cost you $5.00. If you want the 2068 version it will cost you $30 + $2 S&H. The program is available from RMG, Variety Sales or from Grey & Clifford Computer Products/POBox 2186/Inglewood, CA 90305, (213)759-7406

E. MODEM753 (USED WITH THE AERCO RP/M AND 2050 MODEM)

The original version Modem7 was first written by Ward Christensen in the 1970's. Since then, it has gone through numerous revisions by a number of authors. In an effort to provide a terminal program to work in conjunction with the AERCO RP/M operating system and the Westridge 2050 modem, AERCO modified Modem7 for this purpose. The earlier attempts resulted in several software bugs, especially in the area of Xmodem file transfer. Paul Erickson and Bret Lanius (Atlanta Timex User Group) further refined the program and corrected the Xmodem file transfer problem. The only problems still encountered in transferring files occurs on those host systems that are too fast for the program to keep up with.

The program itself features full 80 column screen displays (as generated by the AERCO RP/M operating system), auto dial which includes a dialing menu, but NO auto answer. File transfer occurs directly to disk. You can also "boot" the program off the "A" drive and set it to save the buffer or file transfers automatically onto drives "B" or "C" depending on your configuration. When downloading, a series of numbers appear on the screen which represent the Xmodem blocks transferred. There is still some problems with the program which I encountered testing it. The automatic save function did not work properly. The way it is designed to work is when the buffer is full (it has a 17K buffer area), it should automatically save the contents to disk – this did not occur for me. I have been advised to save it manually instead. In order to alleviate the problem of the host transmitting data too fast for the program to keep up with, if the host system offers you a choice of "NULLS" at the beginning of loggin ON, enter a number between 2–8.

F. LOADER V (USED IN CONJUCTION WITH MTERM II)

Although not strictly a terminal communications program, Loader V is an excellent utility program which is used specifically with Mterm II. The program adds several enhancing features not provided in the original program. These include: 1) Xmodem transfer protocol, 2) Auto–repeat phone dialer (great to use when the line is busy), 3) the ability to load MSCRIPT or Tasword 2 files directly into Mterm's buffer for transmission, 4) ability to load Mterm's buffer with any standard "bytes" file (idea for sending machine code programs), 5) expansion of the dialing directory with 20 additional slots, and 6) communication parameters can be set individually for each separate number.

The Loader V package actually is a series of programs all on one cassette tape. The Xmodem program loads separate from the main program. Also included is a program called "UNLOADER" which can be used to convert the contents of Mterm's buffer in a form suitable for editing/printing into Tasword 2 or MSCRIPT. Another nice program included is "RE–LOADER" which allows you to re–load the buffer while online! All in all, this represents an excellent enhancement to your telecommunications. Comes with a fully documented user manual.

QL TERMINAL SOFTWARE

A. QCODE

Written in the U.K., it also works here in the U.S. The program is compatible with the British "Viewdata" format as well as our "ASCII" type format domestically. Features include autodial, auto answer, a dialing menu capable of holding 32 numbers (each with 4 defineable MACROS), 300/600/1200/2400/4800/9600 baud rate capability. Overall the program is very slick and professional and very easy to use. The screen always displays the parameters at all times. Saving directly to microdrive or disk provided. In addition, screen width can be adjusted between 40/80 columns. However, downloading/uploading is only accomplished through non–error checking ASCII protocol, no Xmodem. When used here in the U.S. at 300 BPS, a product called "MODAPTOR" is required (not required if using a 1200 baud modem).

B. QL TERM

QL TERM is a public domain terminal program written in Superbasic by Rich Moldovan. It is a very simple program in design but does offer Xmodem transfer protocol capability. This is currently the only QL program which offers this for file transfers. The program lacks a capture buffer, however the author plans to add this feature in a later revision. When downloading, it transfers the file directly to microdrive (or disk drive is attached). There is one help screen in the software plus a documentation file to explain it. No continuous printout function available, however it uses Hayes compatible commands. Other features include autodial (including a dialing directory) but lacks auto answer. Both a BASIC and compiled version is available. The Basic version is available for download from the Compuserve QL data library. The compiled version can be obtained directly from the author by sending a formatted microdrive cartridge (refer to Appendix for address). (Editor's note: We have learned that Chris Raynak – Sysop of the TSU BBS has had good success using QLTERM on his BBS. He recommends the following: "compile the BASIC program using Supercharge Basic Compiler. Also, when logging on, if the host system gives you the option to enter the number of nulls, select a high number (on the TSU, enter 50). The download/upload works fine on the TSU and several files now exist in the QL data file library.) The compiled version can be obtained from Rich Moldovan by sending a formatted microdrive cartridge (plus return postage). There is also the capability of running at 1200 BPS!

AVAILABLE BBS SOFTWARE

During much of 1985, there was much interest in starting a BBS system using a TS 2068. Unfortunately, the lack of a standard mass storage device for the TS 2068 and appropriate BBS software hampered this effort. However, in early 1986, a BBS program called "Tinyboard" was released into public domain by Randy and Lucy Gordon (then of the Cinncinati T/S User Group). Their program was just the start of what would be a number of interesting and exciting projects which would ultimately result in a number of bulletin boards operating off a TS 2068 computer.

A. TINYBOARD SOFTWARE

The original Tinyboard BBS software program provided the ability of an unexpanded TS 2068 to serve as a host system. The program provided the "bare bones" essentials (no frills approach) to operate as a remote message base. The selections from the menu included (R)eading (S)canning, (W)riting messages, (C)hat with the sysop and (U)sers log. The public domain version of the program (which by the way is still available in the Compuserve Timex Data Library) was written entirely in BASIC. As a result, the program's execution speed was prohibitively SLOW!

However, since the release of the original version, several individuals have since made many modifications and improvements which have resulted in some fine "tuning" of the program. Among the first to set up a TS 2068 based BBS using the Tinyboard was Joe Newman (of Variety Sales). The intial setup was not crashproof as Joe would later say. Soon after, John Ryan modified the program which would allow it to function with the A & J Microdrives. After more modifications by Joe, he eventually had four separate message bases operating off of two microdrives! (Editor's note – As of this publication, the BBS is currently down due to a blown TS 2068. Joe has been working on a QL based BBS, so be on the lookout for this).

Some other innovators who have worked hard on upgrading the Tinyboard program are Paul Holmgren and Willie Jones of the Indiana Sinclair Timex User Group. They have developed their own unique TS 2068 I.S.T.U.G. BBS program which includes line printing of the caller log, a real-time clock, and all operating totally off an unexpanded TS 2068 and Westridge 2050 (see chapter on bulletin boards for description). Willie Jones claims it is now 99.9% crash proof. It is still entirely in BASIC, but the improvement in speed execution is significant. (Editor's note – the current version of their program is for sale directly from the authors, see Appendix for address).

CASBOARD 2068

From the author (Kurt A. Casby) who brought us the Loader IV and V series of programs, has written a BBS program exclusively for the TS 2068. Designed as a "flexible" BBS program, it can be configured for use with any type of mass storage device (eg. cassette based, A & J mikrodrive, or disk drive setup).

The program comes on cassette and includes three versions: 1) Cassette based, 2) A & J Mikro – drive, 3) Zebra FDD disk drive. However, the program can be easily adapted to work with other disk drive systems such as the AERCO FD – 68. The only exception noted is the old Ramex Millenia K disk drive system. The cassette version maintains its entire message base in RAM and provides for approximately 40 screens of messages. This will vary depending on the length of each message. There is an auto scroll feature which deletes the oldest message as the board fills to capacity. In order to operate the cassette version, all one needs is an "unexpanded TS 2068, a TS 2050 modem and a cassette player."

Additional features can be taken advantage of if you use either mikrodrives or disk drives as the storage media. With either of these setups, MULTIPLE message bases are allowed. Also, uploading and downloading of files is provided for. File transfers can be made using ASCII, HEX, or Xmodem protocol. One nice feature of the program is that downloads are independent of how the file was originally uploaded. That is, something uploaded in HEX could be downloaded by someone else using Xmodem and vice versa.

Two of the boards mentioned in Chapter 3 currently operate using the Casboard program. Both sysops have commented that they are very pleased with the operation of the software thus far (see RMG BBS and Tyler Timex BBS descriptions in Chapter 3). We would anticipate many other people will consider setting up Timex based BBS' using this software. The author has hinted at a possible version two if enough feedback is provided. (Editor's Note – For those interested in a thorough review of the Casboard 2068 software, Mr. Charles Stelding, Sysop of the Tyler Timex BBS has written an article which appears in "THE DATA EXPANSION" newsletter. Contact: David Baulch, Editor, 4424 Geddes Ave., Ft. Worth, Texas, 76107).

SPIFFY BBS

As it was mentioned earlier (see the description of the Looney Bin BBS in Chapter 3), the Spiffy BBS was a program written by innovative Richard Kelsch in his efforts to setup a TS 2068 based BBS. The result was a slick, fast operating machine code program which operated off a TS 2068 and 512K ram board designed by the author himself. Although Richard also had A & J Mikrodrives, these were used only for the purpose of backing up messages. At the time, the software was written to provide for both uploading and downloading of files (but Richard lacked a disk system to implement this). Unfortunately, the Looney Bin's TS 2068 went down for repairs and has since been replaced with an Atari 512 based system.

Richard still plans on marketing the Spiffy BBS program however. In addition, some other exciting projects are on the horizon and include a RAM controller. The controller will give the capability of expanding the 2068's memory to 16 megabytes! It will accomplish this in 32K chunks. Individual memory boards will be the expansion to the controller with each board capable of 128K of static RAM. Also planned is a battery backup for the non – volatile memory. So, keep your eyes open for these products in the future

ADDITIONAL NOTES ON CASBOARD 2068

We were able to test this software for about a month, not nearly long enough to give a complete accounting of it. But, for what they're worth, here are our observations. Our setup was the AERCO Disk Drive Interface, with only one DS/DD disk drive attached. The software comes ready to run on a Zebra FDD Disk Drive, but since all the access to disk are done in BASIC, it is easy to modify the program for the AERCO (or JLO, or probably the LARKEN). The patch used here was written by Charles Stelding who has had a Casboard up since the software was first released back in Nov 86. Only 4 lines really HAD to be changed.

Those familiar with the software of Kurt Casby would expect a first rate BBS here. But many T/S consumers fail to understand the task of software authors today. With a shrinking market, and 6 or 7 possible hardware configurations to target, it isn't exactly easy to please everyone. But for the constraints under which it was written, it is a truely EXCELLENT start. Is was a great day indeed, when I saw in E.A.Brown's catalog that Kurt had written a BBS, with Uploads and Downloads to boot! But a full-blown BBS, such as the ones you log on to regularly, is not written in a day. If there was one standard DOS that we all used, the task would be MUCH simpler.

The original version that Kurt wrote was all in Machine Code. But Kurt didn't want every BBS running the software to look the same. So he added the BASIC portion so that individual SYSOPS could customize their own system. I have heard complaints that all Casboards look the same. But I chaulk this up to the newness of both the software and the sysops in question. It IS a flexible system (which is the only name Kurt gave it,"Flexi-Board") and in time, more "unique" systems will begin to appear, as sysops roll up their sleeves and take the task seriously.

Casboard deals with Loads/Saves the opposite of MTERM. MTERM maintains itself in M.Code and Loads/Saves buffers in the form of standard BASIC files. Casboard maintains itself as BASIC and Loads/Saves in the form of "BYTES" files. This, of course, only works with a disk drive or microdrive.

One problem I had, when first converting the software over to work with the AERCO system, was when I got an Upload and in trying to save the Upload to disk, ended with a "DISK COMMAND NOT UNDERSTOOD" error. Well now I was out of the BBS program, and I wanted to try and save the Upload, but where in memory was it? The manual didn't say. It turns out that the message bases, the Uploads and the Downloads all occupy the same 28.5K of memory (except at different points in time. Let me describe this in terms of a person using the system, and what happens.

Suppose Clive Sinclair calls the BBS. He's greeted by the logon screen which I, the sysop, have customized to say anything I like. It asks Clive for the system password (which can be eliminated). Clive knows the password because he read it in Time Designs Magasine. When Clive logs on, the message base "A" General Interest, is in memory. Clive is looking for QL info. He asks to "S)elect a Message Base". He's given a menu of choices. He picks the QL sub-board. At this point, Casboard SAVES the Board "A" messages to disk (the whole 28.5K, even if there's only 1 message) and then LOADs Board "B" the QL sub-board into the spot where Board A was previously. Clive reads the messages. He reads about an interesting program currently available for Download and wants to get it. He calls for the Download menu. Then he specifies a file (by menu, A,B,C, etc.) then must choose a protocol. Once done, Casboard once again SAVEs the QL message base to disk and LOADs the DL in question into the same spot.